Births in Victoria 1999—2000

Perinatal Data Collection Unit
Public Health
Department of Human Services
Victoria 2001

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This report is also available on the Internet: www.dhs.vic.gov.au/phd/perinatal/index.htm.

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Contents

Highlights

In 2000 the crude birth rate was 13.1 per 1000 residents of Victoria, a decrease from 15.2 per 1000 in 1986. The total number of births in 2000, including stillbirths, was 62,562.

Maternal factors cover a range of demographics as well as pregnancy data:

- 26.2% of women having babies in 2000 were living in rural regions, the lowest proportion recorded in the data collection since it began in 1982.
- The average age of women giving birth was 29.8 years in 2000, with the proportion aged 35 years and over having risen to 19.1%, almost doubling in the last ten years. The average age of women having their first baby has risen from 25.3 years in 1986 to 27.8 years in 2000.
- The overall proportion of teenage women giving birth has remained steady at 3.3% in recent years, but this proportion varies considerably with Region of residence, rising to approximately 6% in some rural areas and dropping to below 2% in the Eastern Metropolitan Region.
- The proportion of married women giving birth has decreased from 88% in 1986 to 75% in 1999/2000 with a corresponding increase in women of defacto status from 3% to 12%. The proportion of single mothers is 12%.
- 25% of women giving birth in Victoria in 1999/2000 were not born in Australia, with approximately 10% born in Asia, 3% in UK and 3.5% in Europe. The proportion of Australian-born mothers varies with Region of residence, rising to over 90% in rural Regions and declining to 64% in the Western Metropolitan Region.
- The proportion of older mothers (less than or equal to 35 years) varies with country of birth. There is a smaller proportion of older women amongst Middle Eastern-born women and a larger proportion amongst women from UK, North America and Asia.
- Most women give birth in hospital (97% in 2000). A small proportion (0.2%) gives birth at home as planned or in a birth centre within a hospital (2.3%) or before arrival at a hospital (0.4%).
- Almost 70% of women giving birth do so as public clients. The proportion of women 35 years and over is much higher (28%) amongst the 30% of private clients compared with the 15% who are 35 years and over and public clients.
- Approximately 41% of women were having their first baby in 1999/2000.
- The proportion of pre-term births (<37 weeks) is almost 7% while 1.3% of births are post-term (>41 weeks).
- In 2000, 40% of women had spontaneous onset of labour and another 19% had spontaneous onset of labour with augmentation. An increasing proportion (13%) has no labour due to more elective caesarean births taking place.
- Overall, 23% of women had babies delivered by caesarean section; 12% were elective caesareans and 11% emergency caesareans. Trend data show a steady increase since 1986, when 16% of births were caesareans. Caesarean birth rates, particularly elective, are higher in the private hospitals and amongst older women (who are more likely to have private accommodation status and who give birth more frequently in private hospitals). Women who have had a previous caesarean comprise 30% of all women having caesarean births.
- Vacuum extraction is used for 6% of births, particularly for first births (approximately 10%). Forceps are used in 7% of births.

- Approximately 26% of women who experience labour had no analgesia for labour, 22% had nitrous oxide only, and 24% had an epidural. The anaesthetic procedure used for caesarean birth (with or without labour) was an epidural in 87% of cases.
- 40% of women have an intact perineum following a vaginal birth, while 22% have an episiotomy and 36% require suturing of a tear.
- Postnatal length of stay continues to decline with 26.1% of women staying in hospital only two days or less in 2000, compared with 7.3% in 1990. Women having a caesarean birth are also staying less time with 39% staying six days or more in 2000, compared with 56% in 1996.

Infant factors include data on singletons and multiple births, liveborn and stillborn:

- There are more male babies born than females, 51.3% compared with 48.7% .
- One third of babies require suction and / or oxygen at birth, and 57% require no method of resuscitation.
- There has been an increase in the proportion of low birthweight babies (<2500gm), from 5.8% in 1986 to 6.7% in 2000.
- 99% of babies are liveborn and survive the neonatal period of 28 days. This report includes deaths of babies of 20 weeks gestation and later (or if gestation unknown, weighing 400 gms or more).
- One quarter of babies weighing <1000 grams are stillborn. Survival rates have improved for infants with birthweights between 500 and 1000 grams.
- 3.3% of babies born in 1999 were twins, and 3.0% were twins in 1997, 1998 and 2000, compared with 1986 when 2.1% of all babies were twins. Slight fluctuations in the number of triplets born (20-30 cases) are also observed. Almost a quarter of twin births are to women 35 years and over compared with 19% of singletons.

Indigenous births. There is considerable underreporting of aboriginality in the PDCU, as in other data sets (refer to Koori Health reports). When compared to non-Indigenous births, the data we have demonstrate differences in maternal age (17% of births to teenage women), method of birth (more spontaneous), birthweight (12% less than 2500gms) and perinatal mortality (16.8 / 1,000).

1. Introduction

1.1 Background

The Perinatal Data Collection Unit (PDCU) was set up in 1982, by an amendment to the Heath Act. The establishment of the PDCU was to improve the health of mothers and babies in Victoria. It is a population based surveillance system to collect information on, and in relation to, the health of mothers and babies. The data collected via a Perinatal Morbidity Statistics form contains information on obstetric conditions, procedures and outcomes, neonatal morbidity and birth defects relating to every birth in Victoria of 20 weeks gestation or more. The hospital or birthing centre (or private practitioner in cases of homebirths) where the birth occurs is responsible for sending the data to the Unit. The midwife attending each birth of at least 20 weeks gestation completes the form. There are approximately 62,000 births in Victoria each year.

The PDCU is responsible to the Consultative Council on Obstetric and Paediatric Mortality and Morbidity (the advisory body to the Minister of Health on maternal, perinatal and childhood deaths). The Council encourages the release of data to all health professionals for statistical and research purposes; however foremost consideration is that the release of data by the Council will not endanger the confidentiality of information.

The majority of data items, of which there are nearly 100, comply with the National Perinatal Minimum Data Set, which is collected by all States and Territories (all other states have a similar Unit to PDCU) and sent to the National Perinatal Statistics Unit for the production of the annual report on Australia's Mothers and Babies.

This report presents a two year (1999—2000) overview of some factors associated with mothers and babies during the perinatal period, i.e. the first 28 days after birth. It provides supplementary information to our previous reports, *Births in Victoria 1983—1992*[1], *Births in Victoria 1992—1996*[2] and *Births in Victoria 1996—1998*[3]. This report also contains trends on a number of demographic and obstetric factors that are of general interest.

1.2 Functions of the VPDCU

- Collect, collate, analyse and interpret information on, and in relation to, all births in Victoria.
- Maintain a register of birth defects diagnosed in children up to 15 years of age who were born in Victoria.
- Provide data to the Consultative Council on Obstetric and Paediatric Mortality and Morbidity to assist in their process of monitoring all perinatal, infant, child (up to 15 years of age), and maternal deaths in Victoria.
- Provide the Victorian data, compliant with the National Perinatal Minimum data set, to the National Perinatal Statistics Unit, to enable analysis of national data, and comparison of characteristics and outcomes between States, Territories (National Perinatal Statistics Unit http://www.aihw.gov.au)
- Provide annual feedback to individual hospitals and homebirth practitioners allowing for statewide comparisons of practice and outcomes.
- Describe for all Victorian births the demographic, medical and pregnancy history of mothers, and the characteristics of their babies.

- Identify risk factors contributing to adverse outcomes of Victorian mothers, their pregnancies, and the health status of their babies.
- Identify and monitor trends in perinatal health and birth defects.
- Conduct epidemiological studies of health problems among pregnant women and infants.
- Respond to requests for perinatal and birth defect data from people involved in research, service provision and the study and maintenance of health of mothers and babies in Victoria.
- Assist in the planning, implementation and evaluation of health services for Victorian pregnant women and their babies.

1.3 Data Source

A standardised Perinatal Morbidity Statistics Form is completed, usually by midwives, for every Victorian birth of 20 weeks gestation or, where gestation is unknown, of birthweight of 400 grams or more (see Appendix A). This includes both in hospital and out of hospital births as part of a mandatory reporting system. This report differs from the Council reports[4] which use the WHO criterion of birthweight 500 grams and over (or at least 22 weeks gestation if birthweight is unknown).

1.4 Data Quality

Validation activities to assess, maintain and improve the quality of data provided to the VPDCU by hospitals are an integral part of our work. This complements and extends the checks built into the system.

1. Validation of Number of Births Reported to the VPDCU (to ensure a form is received for each birth)

Each year a validation is undertaken to compare the number of births that are reported to the VPDCU with the number of births at each hospital in the State[5]. The most recent study (of births in 2000) has shown that 99.6% of all births in the State were reported to the VPDCU.

2. Statewide Validation of Perinatal Data (to determine the quality and reliability of data)

Projects designed to determine the validity of our data are undertaken regularly. These projects[6-9] compare the data recorded on the Perinatal Morbidity Statistics Form with data recorded in the medical record. They have been conducted in 1984, 1986, 1992, 1998 and 2000. Most items are recorded reliably but some variables, including maternal medical conditions, obstetric complications and neonatal morbidity are under-reported[6-9].

3. Education and Liaison Program

Ongoing liaison between the VPDCU and midwives is an integral part of maintaining high quality data. The liaison service is designed to:

- provide guidelines for data collection.
- provide information to enable midwives to understand how the data are collected and the importance of the quality and accuracy of the data that they provide to the VPDCU.
- provide an opportunity for the VPDCU and the midwives to communicate on an informal level.

1.5 Revision of the Perinatal Form, 1999

(See Appendix A for a copy of the Perinatal Morbidity Statistics Form, revised 1999)

In 1999 the VPDCU undertook a major revision of the Perinatal Morbidity Statistics Form to include seven modified data items and thirteen new data items. The revised data items were:

- precoded maternal medical conditions (modified to include mental illness rather than chronic renal disease)
- precoded obstetric complications (modified to include gestational diabetes)
- precoded procedures (modified to include artificial reproductive technology (ART) rather than amniocentesis before and after 22 weeks)
- precoded postpartum haemorrhage (without amount specified on the form)
- presentation (modified to include face and brow)
- type of birth (modified to differentiate between elective and emergency caesareans with and without labour)
- method of resuscitation (modified to reflect national reporting requirements).

The new data items were:

- intended place of birth
- if change in intended place of birth and actual place of birth, when did it occur
- number of previous ectopic pregnancies
- number of ultrasounds before 13 weeks gestation, and between 13-26 weeks gestation
- agent(s) of induction or augmentation
- indications for induction
- analgesia for labour
- anaesthesia for operative delivery
- perineal status
- if mother admitted to ICU
- if baby admitted to SCN / NICU
- place of transfer of mother and / or baby
- mother referred to DOM.

1.6 Births

- In the mid 1960s, the annual Victorian birth rate was approximately 20 per 1,000 mean resident population[4]. There has been a continuing decline in the annual birth rate since then, and is now 13.1 / 1,000 mean resident population.

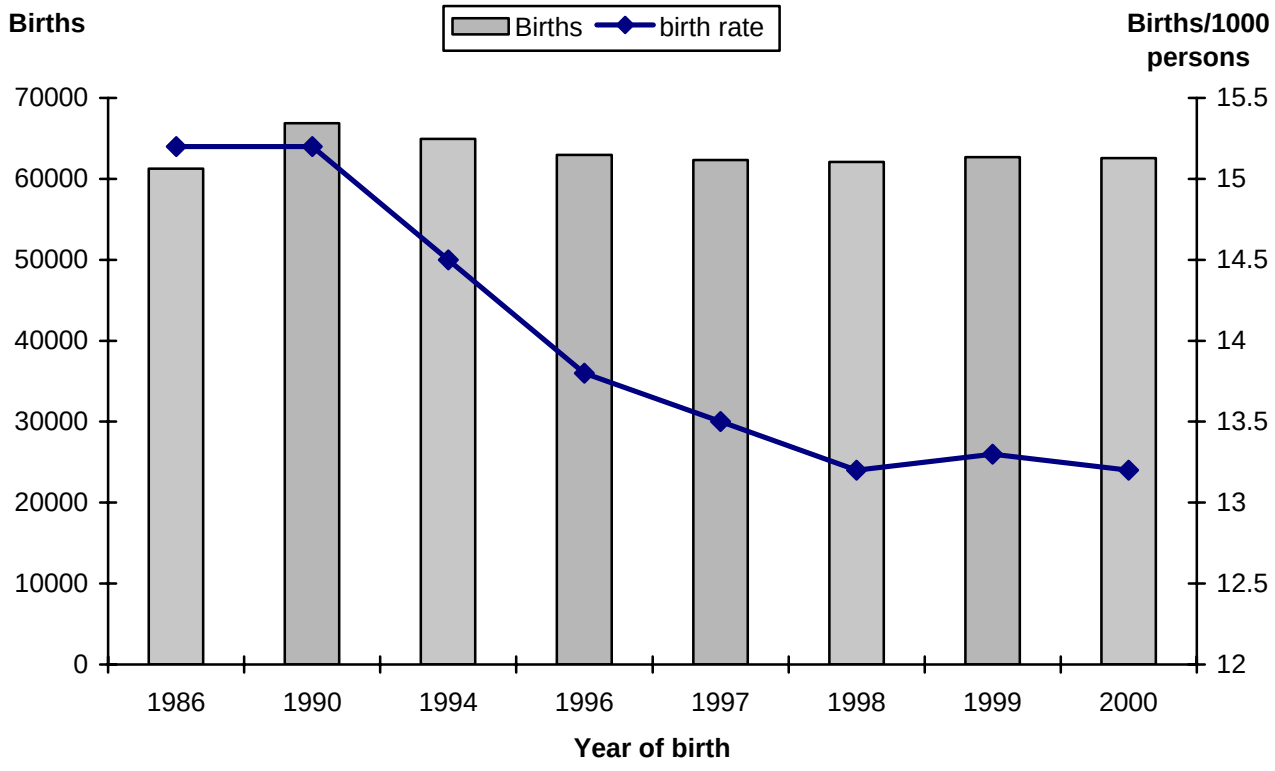
Table 1.1: Total Births in Victoria, 1999—2000

Year	Livebirths	Total Births (live & still)	Estimated Mean Resident Population [10]	Births per 1,000 Mean Resident Population
1999	62,217	62,689	4,707,590	13.3
2000	62,144	62,562	4,765,856	13.1

Table 1.2: Trends in Births in Victoria, 1986—2000

	1986	1990	1994	1996	1997	1998	1999	2000
Total Births	61,253	66,878	64,932	62,951	62,308	62,094	62,689	62,562
Total Livebirths	60,844	66,376	64,448	61,868	62,581	61,685	62,217	62,144
Total Confinements	60,472	66,003	63,982	62,028	61,312	61,069	61,587	61,569
Births/1,000	15.2	15.2	14.5	13.8	13.5	13.2	13.3	13.1
Mean Resident Population	4,019,478	4,406,600	4,475,500	4,561,817	4,605,148	4,689,776	4,707,590	4,765,856

Figure 1.1: Births and Birth Rate in Victoria, 1986—2000



2. Maternal Factors

2.1 Region of Residence

(See Appendix C for Maps of the Metropolitan and Rural Health Region Boundaries.)

Note on Changes in Regional Boundaries:

Regional boundaries have changed several times between 1986 to 2000. This makes it difficult to determine trends in Region of residence over time. In our last two reports[2,3] information was provided according to the 1995 Regional boundaries. The data presented below provides figures according to the current Regional boundaries, which have not changed since 1996.

Table 2.1: Region of Residence, All Confinements, 1999—2000

Region	1999	%	2000	%
Barwon S W	4,154	*6.7*	4,001	*6.5*
Grampians	2,859	*4.6*	2,838	*4.6*
Loddon Mallee	3,606	*5.9*	3,484	*5.7*
Hume	3,289	*5.3*	3,116	*5.1*
Gippsland	2,788	*4.5*	2,683	*4.4*
Rural (subtotal)	**16,696**	***27.1***	**16,122**	***26.2***
Western Metro	8,495	*13.8*	8,643	*14.0*
Northern Metro	10,181	*16.5*	10,219	*16.6*
Eastern Metro	11,037	*17.9*	11,334	*18.4*
Southern Metro	13,921	*22.6*	13,989	*22.7*
Metro (subtotal)	**43,634**	***70.8***	**44,185**	***71.8***
Other*	1,257	*2.0*	1,262	*2.0*
Total	**61,587**	***100.0***	**61,569**	***100.0***

**Refers to women who live in a postcode outside Victoria, but who give birth at a Victorian hospital*

- The proportion of babies born to women living in rural Regions has declined slightly since 1986, reaching its lowest level of 26.2% in 2000.
- There has been an increase in the number of women living outside Victoria who give birth at Victorian hospitals due to the closure of a large NSW hospital along the Victorian-NSW border.

Table 2.2: Trends in Region of Residence (Rural Versus Metropolitan), All Confinements, 1986—2000

Place of Residence	1986	1990	1994	1996	1997	1998	1999	2000
	%	%	%	%	%	%	%	%
Rural	28.2	27.9	27.5	26.6	26.9	27.4	27.1	26.2
Metropolitan	71.0	71.4	71.5	72.3	72.0	71.1	70.8	71.8
Outside Victoria	0.8	0.8	1.0	1.0	1.1	1.5	2.0	2.0

2.2 Local Government Area (LGA)

Note on Changes in LGA:

It is difficult to present trend data on the number of births by Local Government Area due to boundary changes over time, and due to the proportional allocation of some postcodes over several LGAs. For example, according to the 2000 ABS distribution of postcodes, 3351 is distributed among LGAs as follows: Ararat 7.5%, Ballarat 14.8%, Golden Plains 69% and Pyrenees 8.8%.

Listed below is the number of births by Local Government Area (LGA) for 1995—2000. **Figures are approximate only and are based upon the 2000 ABS allocation of postcodes to LGAs.**

These figures differ from those presented in our previous report[3] where information was not only presented for confinements, rather than births, but was also based upon a slightly different distribution.

Table 2.3: Local Government Area, All Births, 1995—2000

LGA	1995	1996	1997	1998	1999	2000
Alpine	153	136	134	123	131	122
Ararat	139	146	135	147	121	112
Ballarat	1,140	1,157	1,104	1,168	1,134	1,091
Banyule	1,474	1,450	1,525	1,452	1,480	1,390
Bass Coast	262	231	218	260	224	248
Baw Baw	513	497	462	484	468	453
Bayside	949	935	987	973	1,045	1,064
Booroondara	1,538	1,546	1,517	1,473	1,493	1,609
Brimbank	2,318	2,381	2,312	2,305	2,257	2,311
Buloke	96	82	72	76	73	79
Campaspe	500	504	511	535	473	485
Cardinia	715	719	659	668	685	638
Casey	2,913	2,978	2,999	2,935	3,038	2,920
Central Goldfields	157	142	145	133	152	128
Colac-Otway	278	258	280	256	246	263
Corangamite	261	259	255	221	241	213
Darebin	1,952	1,875	1,927	1,775	1,865	1,779
Delatite	236	232	207	234	231	230
East Gippsland	503	540	449	573	396	385
Frankston	1,697	1,595	1,593	1,507	1,546	1,536
French Island	0	0	0	0	0	0
Gannawarra	170	186	171	160	182	165
Glen Eira	1,413	1,355	1,476	1,452	1,423	1,503
Glenelg	301	289	267	231	260	238
Golden Plains	176	145	141	141	161	155

(cont.)

Table 2.3: Local Government Area, All Births, 1995—2000 (cont.)

LGA	1995	1996	1997	1998	1999	2000
Greater Bendigo	1,188	1,109	1,130	1,102	1,199	1,102
Greater Dandenong	1,895	1,966	1,947	1,761	1,784	1,793
Greater Geelong	2,459	2,391	2,365	2,376	2,442	2,329
Greater Shepparton	844	831	850	847	907	901
Hepburn	169	186	130	166	157	147
Hindmarsh	90	92	94	73	86	61
Hobsons Bay	1,284	1,140	1,182	1,205	1,278	1,174
Horsham	282	266	270	264	233	250
Hume	2,170	2,126	2,128	2,171	2,108	2,165
Indigo	120	110	96	126	150	102
Kingston	1,659	1,718	1,697	1,648	1,619	1,596
Knox	2,020	1,992	1,945	1,953	1,976	2,020
La Trobe	1,086	994	1,002	959	926	862
Loddon	84	123	87	99	130	101
Macedon Ranges	491	482	419	446	470	445
Manningham	1,020	1,030	1,122	1,030	1,053	1,131
Maribyrnong	1,050	1,016	992	920	1,018	991
Maroondah	1,398	1,362	1,360	1,343	1,348	1,313
Melbourne	375	426	416	456	469	502
Melton	672	639	562	563	754	893
Mildura	781	693	771	708	680	721
Mitchell	438	458	397	435	425	380
Moira	375	371	387	353	370	382
Monash	1,661	1,615	1,628	1,619	1,593	1,582
Moonee Valley	1,411	1,429	1,429	1,379	1,356	1,432
Moorabool	349	365	326	322	313	345
Moreland	2,066	2,020	1,938	2,049	1,888	1,907
Mornington Peninsula	1,418	1,386	1,436	1,379	1,414	1,433
Mount Alexander	188	183	191	180	169	166
Moyne	209	230	217	239	214	191
Murrindindi	173	172	140	140	139	135
Nillumbik	810	766	812	811	764	803
Northern Grampians	194	181	165	159	156	176
Port Phillip	888	840	804	813	842	951
Pyrenees	67	69	62	63	66	65
Queenscliffe	33	38	30	43	28	27
South Gippsland	344	301	327	303	329	301
Southern Grampians	247	227	209	224	167	173

(cont.)

Table 2.3: Local Government Area, All Births, 1995—2000

LGA	1995	1996	1997	1998	1999	2000
Stonnington	885	904	877	918	920	1,036
Strathbogie	101	106	95	90	78	77
Surf Coast	204	213	215	229	232	244
Swan Hill	312	314	298	352	317	298
Towong	61	71	66	53	60	55
Wangaratta	321	295	310	289	305	271
Warrnambool	411	409	410	417	389	379
Wellington	595	574	522	572	527	497
West Wimmera	41	49	37	44	45	59
Whitehorse	1,683	1,767	1,660	1,759	1,857	1,846
Whittlesea	1,662	1,699	1,717	1,687	1,659	1,718
Wodonga	476	458	481	483	532	546
Wyndham	1,386	1,447	1,325	1,324	1,336	1,274
Yarra	910	905	890	813	900	914
Yarra Ranges	2,094	2,018	1,994	2,017	1,916	1,947
Yarriambiack	110	87	93	86	88	75
Other*	601	655	706	948	1,185	1,160
Total	**63,715**	**62,951**	**62,307**	**62,092**	**62,689**	**62,562**

*Refers mainly to women living along the Victorian/NSW border.

2.3 Maternal Age

- The average age of women giving birth in Victoria each year continues to increase slightly, rising from 29.7 years in 1999 to 29.8 years in 2000.

Table 2.4: Maternal Age Groups, All Confinements, 1999—2000

Maternal Age Group (years)	1999	%	2000	%
less than 15	9	*0.0*	13	*0.0*
15-19	2,010	*3.3*	2,004	*3.3*
20-24	8,017	*13.0*	7,615	*12.4*
25-29	19,454	*31.6*	18,905	*30.7*
30-34	20,827	*33.8*	21,286	*34.6*
35-39	9,600	*15.6*	9,983	*16.2*
40-44	1,612	*2.6*	1,693	*2.8*
45 and over	58	*0.1*	62	*0.1*
Unknown	0	*0.0*	8	*0.0*
Total	**61,587**	***100.0***	**61,569**	***100.0***
Average age	**29.7**		**29.8**	

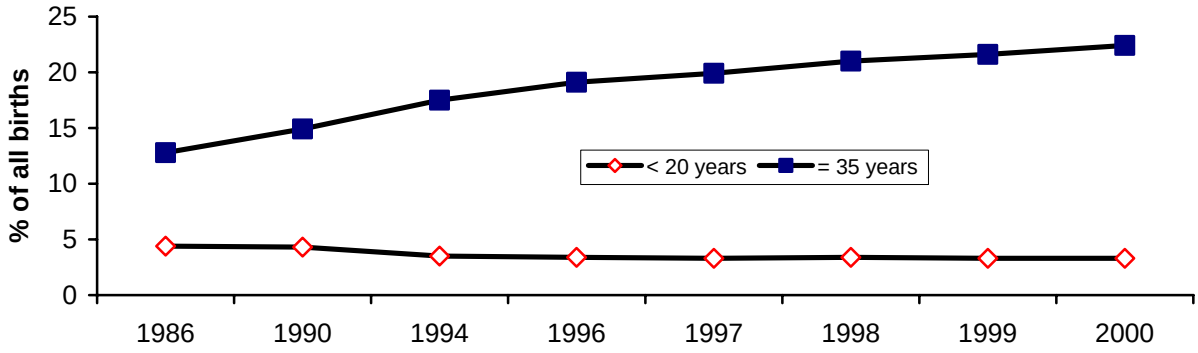
- The average maternal age has risen from 27.6 in 1986 to 29.8 in 2000.

- The average age of women having their first baby has risen from 25.3 years in 1986 to 27.8 years in 2000.

Table 2.5: Trends in Maternal Age Groups, All Confinements, 1986—2000

Maternal Age Group (years)	1986 %	1990 %	1994 %	1996 %	1997 %	1998 %	1999 %	2000 %
< 20	4.4	4.3	3.5	3.4	3.3	3.4	3.3	3.3
20-24	21.6	18.3	16.4	14.6	14.2	13.2	13.0	12.4
25-29	40.4	37.6	33.8	33.1	32.8	32.4	31.6	30.7
30-34	25.1	29.0	32.2	33.1	33.1	33.5	33.8	34.6
35-39	7.4	9.3	12.1	13.6	14.2	15.1	15.6	16.2
40+	1.0	1.3	1.9	2.1	2.4	2.5	2.7	2.9
Average Age	27.6	28.2	28.9	29.3	29.4	29.6	29.7	29.8
***nulliparae**	25.6	26.2	27.0	27.4	27.5	27.8	28.0	28.2

Figure 2.1: Trends in Maternal Age Groups, <20 and >=35, All Confinements, 1986—2000



<20 yrs	*4.4%*	*4.3%*	*3.5%*	*3.4%*	*3.3%*	*3.4%*	*3.3%*	*3.3%*
>=35 yrs	*8.4%*	*10.6%*	*14.0%*	*15.7%*	*16.6%*	*17.6%*	*18.3%*	*19.1%*

- Combined data for the two years shows that maternal age distribution varies between the residential Regions in Victoria.
- The metropolitan Regions continue to have a smaller proportion of younger mothers than the rural Regions. In Eastern Metro the proportion of women giving birth at 35 years and over is 22.0% compared to 15.3% in Barwon SW (the highest proportion of mothers giving birth at 35 years and over in the rural Regions.) Conversely, the number of mothers aged less than 20 in the Eastern Metro is only 1.6% compared to 4.5% in Barwon SW (the smallest proportion of mothers giving birth aged less than 20 in the rural Regions.)

Table 2.6: Maternal Age Groups, All Confinements, by Region of Residence, Pooled Data, 1999—2000

Region	< 20	%	20-24	%	25-29	%	30-34	%	35-39	%	40+	%
Barwon SW	370	*4.5*	1,219	*14.9*	2,704	*33.2*	2,613	*32.0*	1,068	*13.1*	181	*2.2*
Grampians	285	*5.0*	896	*15.7*	1,943	*34.1*	1,740	*30.5*	717	*12.6*	116	*2.1*
Loddon Mallee	434	*6.1*	1,226	*17.3*	2,286	*32.2*	2,088	*29.5*	891	*12.6*	164	*2.3*
Hume	331	*5.1*	1,109	*17.3*	2,153	*33.6*	1,844	*28.8*	815	*12.7*	153	*2.4*
Gippsland	315	*5.7*	1,049	*19.2*	1,822	*33.3*	1,533	*28.0*	630	*11.5*	121	*2.2*
Western Metro	491	*2.8*	2,218	*12.9*	5,670	*33.1*	5,737	*33.5*	2,565	*15.0*	456	*2.7*
Northern Metro	534	*2.6*	2,516	*12.3*	6,064	*29.7*	7,276	*35.7*	3,409	*16.7*	600	*3.0*
Eastern Metro	364	*1.6*	1,774	*7.9*	6,596	*29.5*	8,709	*38.9*	4,232	*18.9*	695	*3.1*
Southern Metro	731	*2.6*	3,216	*11.5*	8,288	*29.7*	9,838	*35.2*	4,954	*17.7*	883	*3.2*
Other*	181	*7.2*	409	*16.3*	833	*33.1*	735	*29.2*	302	*12.0*	56	*2.2*
Total#	**4,036**	***3.3***	**15,632**	***12.7***	**38,359**	***31.1***	**42,113**	***34.2***	**19,583**	***15.9***	**3,425**	***2.8***

*Refers to women who live in a postcode outside Victoria, but who give birth at a Victorian hospital
excludes 8 cases where maternal age is unknown

2.4 Marital Status

Table 2.7: Marital Status, All Confinements, 1999—2000

Marital Status	1999	%	2000	%
Married	46,420	*75.4*	46,374	*75.3*
De facto	7,443	*12.1*	7,291	*11.8*
Single	6,936	*11.3*	7,189	*11.7*
Separated	448	*0.7*	387	*0.6*
Divorced	258	*0.4*	263	*0.4*
Widowed	26	*0.0*	25	*0.0*
Unknown	56	*0.1*	40	*0.1*
Total	**61,587**	***100.0***	**61,569**	***100.0***

- The proportion of women giving birth who are married has decreased from 88.1% in 1986 to 75% in both 1999 / 2000.
- Over the fifteen year period, 1986—2000, there has been an increase in the number of women in de facto relationships, from 2.9% in 1986 to a maximum of 12.1% in 1999. There has also been an increase in the number of single women from 7.7% (1986) to 11.7% (2000).

Table 2.8: Trends in Marital Status, All Confinements, 1986—2000

Marital Status	1986 %	1990 %	1994 %	1996 %	1997 %	1998 %	1999 %	2000 %
Married	88.1	83.4	79.5	78.0	77.1	76.1	75.4	75.3
De facto	2.9	6.2	8.9	10.1	10.7	11.4	12.1	11.8
Single	7.7	9.2	10.1	10.3	10.9	11.1	11.3	11.7
Widowed/divorced/ separated	1.3	1.1	1.2	1.3	1.1	1.2	1.2	1.1

2.5 Country of Birth

- The highest proportion of Non-English Speaking Background (NESB) women giving birth in Victoria are from Asia. This proportion was 10% in 2000. The proportion of Australian born mothers remains stable at approximately 76% of all women giving birth in Victoria.

Table 2.9: Maternal Country of Birth, All Confinements, 1999—2000

Country of Birth	1999	%	2000	%
Australia	47,028	*76.4*	46,621	*75.7*
Oceania (inc NZ)	1,539	*2.5*	1,528	*2.5*
UK and Eire	2,153	*3.5*	1,983	*3.2*
Europe	2,207	*3.6*	2,151	*3.5*
Asia (incl SE, NE, Southern)	5,626	*9.1*	6,186	*10.0*
Middle East	1,466	*2.4*	1,444	*2.3*
North America	310	*0.5*	341	*0.6*
South America	346	*0.6*	359	*0.6*
Africa	874	*1.4*	900	*1.5*
Other/Unknown	38	*0.1*	56	*0.1*
Total	**61,587**	***100.0***	**61,569**	***100.0***

- Asian-born women contribute to the largest number of NESB women giving birth in Victoria – in particular those born in Vietnam and China.

Table 2.10: Changes in the Number of Women Giving Birth from the Most Frequent Non-English Speaking Countries, 1999—2000

	1999	Number of Births	2000	Number of Births
1	Vietnam	1,685	Vietnam	1905
2	China	834	China	883
3	Former Yugoslavia	636	Former Yugoslavia	579
4	Lebanon	572	Philippines	567
5	Philippines	536	Lebanon	548
6	India	470	India	519
7	Sri Lanka	459	Sri Lanka	457
8	Turkey	414	Other Africa	411
9	Other Africa	339	Turkey	403
10	Malaysia	283	Malaysia	322

- There continues to be a decline in the proportion of women giving birth in Victoria who were born in the UK, Eire or Europe, and a corresponding increase in the proportion of women born in Asian countries.
- A further analysis of the Asian born mothers shows that in 2000, 60% of these women came from South East Asia, 20% from North East Asia and 20% from Southern Asia.

Table 2.11: Trends in Maternal Country of Birth, All Confinements, 1986—2000

Maternal Country of Birth	1986 %	1990 %	1994 %	1996 %	1997 %	1998 %	1999 %	2000 %
Australia	76.1	75.4	75.0	74.7	75.2	76.4	76.4	75.7
Oceania inc NZ	1.7	2.4	2.2	2.4	2.3	2.3	2.5	2.5
UK inc Eire	5.8	5.2	4.5	4.1	4.0	3.7	3.5	3.2
Europe	7.4	5.7	4.5	4.2	4.0	3.8	3.6	3.5
Mid East	2.0	2.3	2.4	2.6	2.5	2.5	2.4	2.3
Asia	5.1	6.7	8.9	9.6	9.5	8.8	9.1	10.0
Nth America	0.5	0.5	0.5	0.5	0.5	0.6	0.5	0.6
Sth America	0.4	0.5	0.6	0.6	0.5	0.5	0.6	0.6
Africa	1.0	1.1	1.2	1.2	1.3	1.2	1.4	1.5

- Over 90% of mothers living in the rural Regions are Australian born. The Western Metro and Northern Metro Regions have the highest number of non-Australian born women giving birth in Victoria. In the Western Metro Region, 18% of mothers were born in an Asian country. In the Northern Metro Region, 10% of mothers were from Asia and almost 9% from the Middle East.

Table 2.12: Maternal Country of Birth, All Confinements, By Region of Residence, Pooled Data, 1999—2000

					Rural Regions					
Country of Birth	**Barwon S W**	***%***	**Grampians**	***%***	**Loddon Mallee**	***%***	**Hume**	***%***	**Gippsland**	***%***
Australia	7,473	*91.6*	5,282	*92.7*	6,619	*93.4*	5,871	*91.7*	5,104	*93.3*
Oceania inc NZ	102	*1.3*	61	*1.1*	129	*1.8*	81	*1.3*	64	*1.2*
UK inc Eire	214	*2.6*	148	*2.6*	133	*1.9*	122	*1.9*	115	*2.1*
Europe	155	*1.9*	74	*1.3*	46	*0.6*	94	*1.5*	59	*1.1*
Asia	129	*1.6*	81	*1.4*	99	*1.4*	90	*1.4*	97	*1.8*
Middle East	18	*0.2*	8	*0.1*	37	*0.5*	101	*1.6*	2	*0.0*
Nth America	25	*0.3*	15	*0.3*	12	*0.2*	18	*0.3*	14	*0.3*
Sth America	6	*0.1*	5	*0.1*	2	*0.0*	6	*0.1*	4	*0.1*
Africa	24	*0.3*	22	*0.4*	10	*0.1*	18	*0.3*	10	*0.2*
Subtotal*	**8,146**	***100***	**5,696**	***100***	**7,087**	***100***	**6,401**	***100***	**5,469**	***100***
					Metropolitan Regions					
Country of Birth	**Western Metro**	***%***	**Northern Metro**	***%***	**Eastern Metro**	***%***	**Southern Metro**	***%***	**Other**	***%***
Australia	10,939	*63.8*	13,937	*68.3*	16,793	*75.1*	19,354	*69.3*	2,277	*90.4*
Oceania inc NZ	498	*2.9*	530	*2.6*	523	*2.3*	1,007	*3.6*	72	*2.9*
UK inc Eire	448	*2.6*	520	*2.5*	988	*4.4*	1,397	*5.0*	51	*2.0*
Europe	960	*5.6*	958	*4.7*	641	*2.9*	1,339	*4.8*	32	*1.3*
Asia	3,084	*18.0*	2,090	*10.2*	2,650	*11.8*	3,451	*12.4*	41	*1.6*
Middle East	360	*2.1*	1,785	*8.8*	189	*0.8*	386	*1.4*	24	*1.0*
Nth America	80	*0.5*	93	*0.5*	167	*0.7*	217	*0.8*	10	*0.4*
Sth America	227	*1.3*	115	*0.6*	118	*0.5*	220	*0.8*	2	*0.1*
Africa	514	*3.0*	367	*1.8*	294	*1.3*	507	*1.8*	8	*0.3*
Subtotal*	**17,110**	***100***	**20,395**	***100***	**22,363**	***100***	**27,878**	***100***	**2,517**	***100***

*excludes 94 women for whom country of birth was not recorded

- Non-Australian born women having babies in Victoria tend to be older than Australian-born women giving birth. Over 34% of women born in the United Kingdom are 35 years and older, as are 28% from North America, 25% from Europe and 24% from Asia. This is compared to 17% of Australian-born women. However, women born in the Middle East tend to be younger than Australian-born women with only 14% 35 years and older.

Table 2.13: Maternal Country of Birth, All Confinements, by Maternal Age Group, Pooled Data, 1999—2000

Country of Birth	<20	%	20-24	%	25-29	%	30-34	%	35-39	%	40+	%	Total[#]
Australia	3,505	*3.7*	12,227	*13.1*	30,060	*32.1*	31,927	*34.1*	13,694	*14.6*	2,230	*2.4*	93,643
Oceania inc NZ	125	*4.1*	487	*15.9*	848	*27.6*	976	*31.8*	533	*17.4*	98	*3.2*	3,067
UK inc Eire	39	*0.9*	187	*4.5*	813	*19.7*	1,686	*40.8*	1,196	*28.9*	215	*5.2*	4,136
Europe	42	*0.9*	447	*10.3*	1,075	*24.7*	1,686	*38.7*	903	*20.7*	204	*4.7*	4,357
Asia	162	*1.3*	1,253	*10.6*	3,630	*30.7*	3,961	*33.5*	2,321	*19.6*	485	*4.1*	11,812
Middle East	101	*3.5*	674	*23.2*	947	*32.6*	779	*26.8*	345	*11.9*	63	*2.1*	2,909
Nth America	6	*0.9*	48	*7.4*	148	*22.7*	264	*40.6*	150	*23.0*	35	*5.4*	651
Sth America	32	*4.5*	88	*12.5*	239	*33.9*	212	*30.1*	110	*15.6*	24	*3.4*	705
Africa	22	*1.2*	205	*11.6*	563	*31.7*	605	*34.1*	312	*17.6*	67	*3.8*	1,774

#excludes 94 cases with unknown country of birth and 8 cases with unknown maternal age.

- Women of highest parity are from the Middle East and Oceania including New Zealand.

Table 2.14: Maternal Country of Birth, All Confinements, by Parity, Pooled Data, 1999—2000

Country of Birth	None	%	1-2	%	3+	%	Total*
Australia	40,253	*42.2*	47,753	*50.1*	7,306	*7.7*	95,312
Oceania inc NZ	1,134	*36.3*	1,476	*47.2*	516	*16.5*	3,126
UK inc Eire	1,506	*35.8*	2,281	*54.2*	418	*9.9*	4,205
Europe	1,753	*39.6*	2,325	*52.4*	353	*7.9*	4,431
Asia	5,242	*43.9*	6,087	*50.9*	617	*5.2*	11,946
Middle East	855	*28.9*	1,517	*51.3*	585	*19.7*	2,957
Nth America	293	*44.2*	310	*46.8*	60	*9.1*	663
Sth America	318	*44.5*	343	*48.0*	54	*7.5*	715
Africa	598	*33.3*	932	*51.8*	267	*14.9*	1,797

*excludes 1 case with unknown parity

2.6 Place of Birth

- The number and proportion of planned homebirths and unplanned (emergency home or in-transit) births remains constant between 1999 and 2000.

Table 2.15: Place of Birth, All Confinements, 1999—2000

Place of Birth	1999	%	2000	%
Hospital births	60,333	*98.0*	59,786	*97.1*
Birth Centre	888	*1.4*	1,422	*2.3*
Unplanned out-of-hospital births (BBA)*	233	*0.4*	248	*0.4*
Planned homebirths	132	*0.2*	113	*0.2*
Total	**61,586**[#]	***100.0***	**61,569**	***100.0***

#excludes 1 case who had an unknown place of birth

*BBA = Born Before Arrival

- Of the hospital confinements there were 17 women in 1999 and 37 women in 2000 who had intended to birth at home, but who gave birth in hospital. One was a BBA.

2.7 Accommodation Status

Notes on Accommodation Status:

Data on accommodation status "will tell us the number of people who are being treated as **public or private patients**. It will not tell us about the insurance status of patients in either category" (Refer PMS Notifiers' Guide[11] p.9).

- The proportion of private and public mothers is similar in 1999 and 2000, with approximately 70% of women being public clients compared to 30% being private clients.

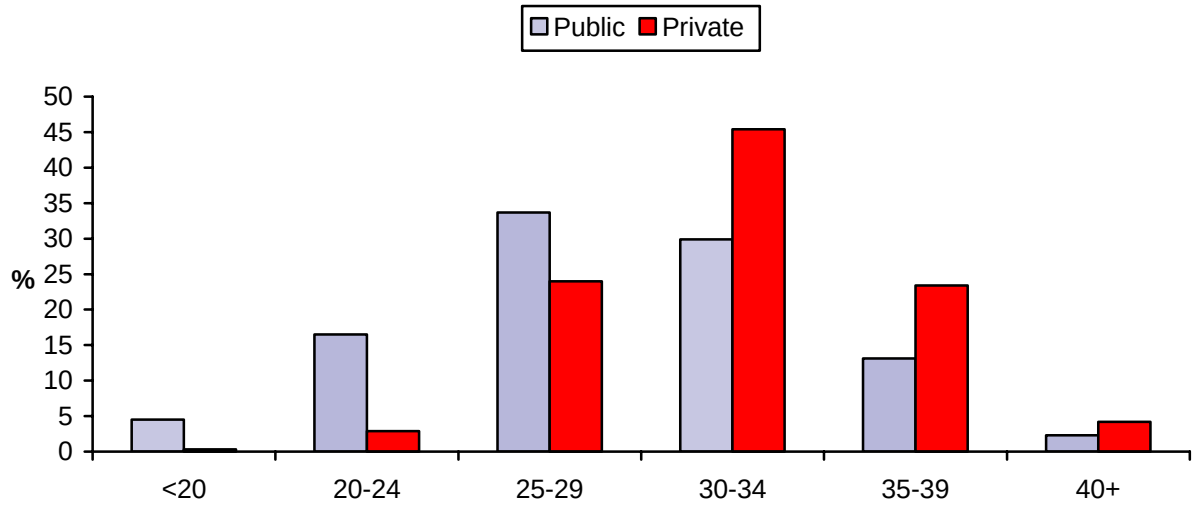
Table 2.16: Accommodation Status, All Confinements, 1998—2000

Accommodation Status	1998*	%	1999	%	2000	%
Public	41,410	*67.8*	43,638	*70.9*	42,833	*69.6*
Private	19,662	*32.2*	17,949	*29.1*	18,736	*30.4*
Total	**61,072**	***100.0***	**61,587**	***100.0***	**61,569**	***100.0***

*1998 data have been included in this table because this was the first year information on accommodation status was collected

- 27.6% of women with private accommodation status are over the age of 35 years compared to 15.4% of public clients in the year 2000.

Figure 2.2: Accommodation Status by Maternal Age Group, All Confinements, 2000



	<20	20-24	25-29	30-34	35-39	40+
Public	*4.5%*	*16.5%*	*33.7%*	*29.9%*	*13.1%*	*2.3%*
Private	*0.3%*	*2.9%*	*24.0%*	*45.4%*	*23.4%*	*4.2%*

2.8 Pregnancy History

- Gravidity is defined as the total number of previous pregnancies including the current pregnancy, regardless of the outcome (therefore including spontaneous and induced abortions).
- No changes in gravidity have been observed between 1999 and 2000.

Table 2.17: Mother's Gravidity, All Confinements, 1999—2000

Gravidity	1999	%	2000	%
One (current preg)	19,106	*31.0*	19,040	*30.9*
Two	19,221	*31.2*	19,208	*31.2*
Three	11,805	*19.2*	11,908	*19.3*
Four	6,070	*9.9*	5,970	*9.7*
Five	2,847	*4.6*	2,779	*4.5*
Six or more	2,538	*4.1*	2,663	*4.3*
Total*	**61,587**	***100.0***	**61,568**	***100.0***

*excludes 1 case with unknown gravidity

- There is increasing gravidity of six or more pregnancies from 3.1% in 1986 to 4.3% in 2000. This reflects increased reporting of fetal losses (spontaneous and induced).

Table 2.18: Trends in Mother's Gravidity, All Confinements, 1986—2000

Gravidity	1986	1990	1994	1996	1997	1998	1999	2000
	%	%	%	%	%	%	%	%
One (current preg)	31.0	31.7	31.1	30.2	30.3	30.5	31.0	30.9
Two	31.9	31.2	31.1	31.8	31.5	31.6	31.2	31.2
Three	19.8	19.7	19.8	19.7	19.7	19.7	19.2	19.3
Four	9.8	9.6	9.9	9.8	9.9	9.6	9.9	9.7
Five	4.3	4.4	4.4	4.5	4.5	4.5	4.6	4.5
Six or more	3.1	3.5	3.8	3.9	4.0	4.1	4.1	4.3

- Parity is defined as the number of previous pregnancies resulting in a birth (liveborn or stillborn).
- No changes in parity have been observed between 1999 and 2000.

Table 2.19: Mother's Parity, All Confinements, 1999—2000

Parity	1999	%	2000	%
None	25,394	*41.2*	25,678	*41.7*
One	21,319	*34.6*	21,301	*34.6*
Two	9,817	*15.9*	9,642	*15.7*
Three	3,322	*5.4*	3,203	*5.2*
Four	1,052	*1.7*	1,036	*1.7*
Five or more	683	*1.1*	708	*1.1*
Total*	**61,587**	***100.0***	**61,568**	***100.0***

*excludes 1 case with unknown gravidity

- Between 1986-2000 there has been an increase in the proportion of women who have had no previous births (parity is none). There is a decrease in the number of women who have had either two or three previous births during this period.

Table 2.20: Trends in Mother's Parity, All Confinements, 1986—2000

Parity	1986	1990	1994	1996	1997	1998	1999	2000
	%	%	%	%	%	%	%	%
None	38.8	40.8	40.2	39.7	39.9	40.1	41.2	41.7
One	34.3	33.3	34.0	35.3	35.4	35.2	34.6	34.6
Two	17.6	17.0	17.1	16.5	16.2	16.2	15.9	15.7
Three	6.4	5.9	5.9	5.6	5.6	5.6	5.4	5.2
Four	1.7	1.9	1.7	1.8	1.6	1.7	1.7	1.7
Five or more	1.1	1.1	1.2	1.1	1.2	1.2	1.1	1.1

2.9 Gestation

(For details on birthweight and gestation see section 3.4).

- The decline in the proportion of babies born after 41 weeks gestation continues from 1.6% (1999) to 1.3%(2000). The proportion of preterm confinements (< 37 weeks) was 6.9% in both 1999 and 2000.

Table 2.21: Gestation at Birth, All Confinements, 1999—2000

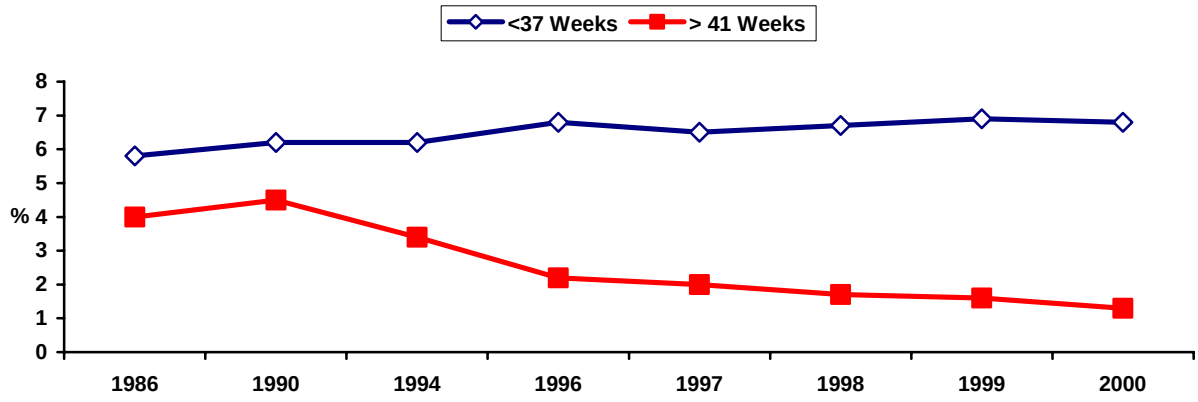
Gestation (weeks)	1999	%	2000	%
20-27	464	*0.8*	436	*0.7*
28-31	400	*0.6*	415	*0.7*
32-36	3,410	*5.5*	3,356	*5.5*
37-41	56,338	*91.5*	56,522	*91.8*
>41	975	*1.6*	831	*1.3*
Unknown	0	*0.0*	9	*0*
Total	**61,587**	***100.0***	**61,569**	***100.0***

- There has been an increasing proportion of women delivering preterm, from 5.8% in 1986 to 6.9% in 2000. A decline in the number of mothers delivering after 41 weeks (4% in 1986 and 1.3% in 2000) is seen.

Table 2.22: Trends in Gestation at Birth, All Confinements, 1986—2000

Gestation (weeks)	1986 %	1990 %	1994 %	1996 %	1997 %	1998 %	1999 %	2000 %
20-27	0.4	0.6	0.7	0.7	0.7	0.6	0.8	0.7
28-31	0.6	0.6	0.6	0.6	0.7	0.7	0.6	0.7
32-36	4.7	5.0	4.9	5.4	5.1	5.4	5.5	5.5
37-41	89.9	88.1	89.5	91.0	91.5	91.5	91.5	91.8
> 41	4.0	4.5	3.4	2.2	2.0	1.7	1.6	1.3
Unknown	0.3	1.1	0.9	0	0	0	0	0

Figures 2.3: Trends in Pre-Term Births (<37 weeks) and Post-Term Births (>41 weeks), 1986—2000



<37 Wks	*5.8%*	*6.2%*	*6.2%*	*6.8%*	*6.5%*	*6.7%*	*6.9%*	*6.9%*
>41 Wks	*4%*	*4.5%*	*3.4%*	*2.2%*	*2.0%*	*1.7%*	*1.6%*	*1.3%*

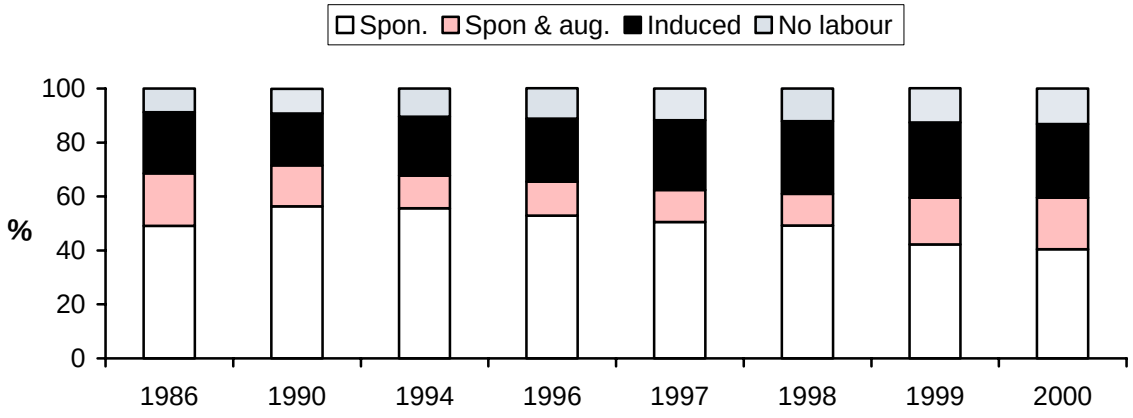
2.10 Onset of Labour

Table 2.23: Onset of Labour, All Confinements, 1999—2000

Labour	1999	%	2000	%
Spontaneous	25,990	*42.2*	24,881	*40.4*
Spontaneous and augmented	10,629	*17.3*	11,766	*19.1*
Induced	17,171	*27.9*	16,803	*27.3*
No labour	7,797	*12.7*	8,119	*13.2*
Total	**61,587**	***100.0***	**61,569**	***100.0***

- The proportion of women with spontaneous onset of labour (without augmentation) has declined from 57.2% in 1992 to 40.4% in 2000.
- The proportion of inductions has increased from 22.6% in 1986 to 27.9% in 1999 and 27.3% in 2000.
- Births without labour (ie. elective caesarean births) have continued to increase from 8.8% in 1986 to 13.2% in 2000 (see Table 2.26).
- In women who began labour spontaneously and were subsequently augmented, there appears to be a decline until 1998, and then a sudden increase in augmentations in 1999 and 2000. This is not a true increase, but reflects recording changes with the implementation of the new Perinatal Form in 1999. Previous to this, spontaneous labours augmented with artificial rupture of membranes (ARM) were not collected as augmentations. However from 1999 onwards, when the form introduced a new data item on the agent of induction or augmentation, these cases were recorded. This has resulted in an artificial increase in these figures.

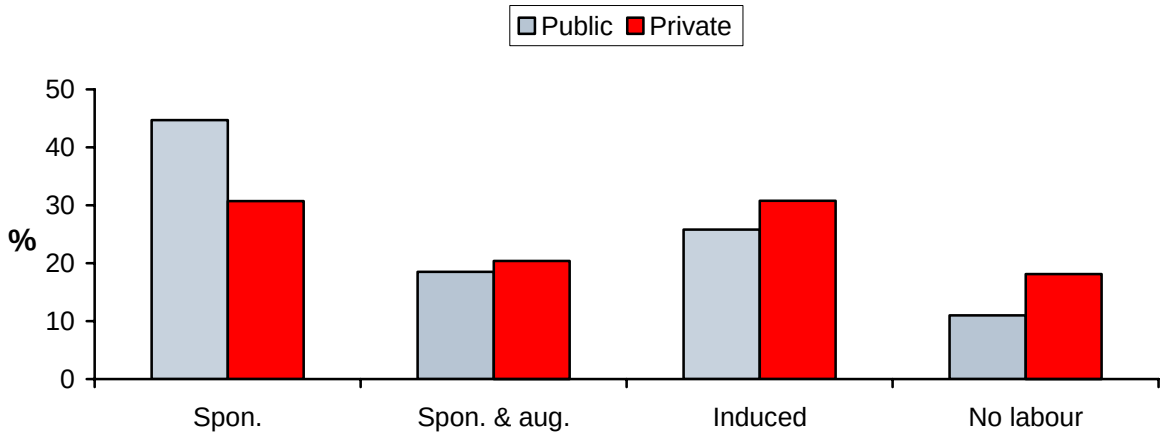
Figure 2.4: Trends in Onset of Labour, All Confinements, 1986—2000



	1986	1990	1994	1996	1997	1998	1999	2000
Spontaneous	*49.1%*	*56.4%*	*55.6%*	*52.9%*	*50.5%*	*49.2%*	*42.2%*	*40.4%*
Spont & aug.	*19.5%*	*15.1%*	*12.1%*	*12.6%*	*11.9%*	*11.8%*	*17.3%*	*19.1%*
Induced	*22.6%*	*19.2%*	*21.9%*	*23.3%*	*25.9%*	*26.9%*	*27.9%*	*27.3%*
No labour	*8.8%*	*9.2%*	*10.4%*	*11.3%*	*11.7%*	*12.1%*	*12.7%*	*13.2%*

- Women with private accommodation status are more likely to be induced (30.8%) or to have no labour (18.1%) than women with public accommodation status (25.8% and 11.0% respectively).

Figure 2.5 Onset of Labour by Accommodation Status, All Confinements, 2000



Public	*44.7%*	*18.5%*	*25.8%*	*11.0%*
Private	*30.7%*	*20.4%*	*30.8%*	*18.1%*

- The most common combination of induction agents is oxytocin and ARM, with over 30% of inductions using this method.

Table 2.24: Agent(s) of Induction, 1999—2000

	1999		2000	
Induction Agent(s)	**No. Induced (n=17,171)**	***% of inductions (27.9)***	**No. Induced (n=16,803)**	***% of inductions (27.3)***
Oxytocin only	1,907	*11.1*	1,885	*11.2*
Prostin# only	3,230	*18.8*	3,088	*18.4*
ARM* only	1,330	*7.7*	1,272	*7.6*
Oxytocin & prostin	620	*3.6*	671	*4.0*
Oxytocin & ARM	5,563	*32.4*	5,232	*31.1*
Prostin & ARM	1,777	*10.3*	1,767	*10.5*
Prostin, oxytocin & ARM	2,730	*15.9*	2,888	*17.2*
Other	14	*0.1*	0	*0*
Total	**17,171**	***100.0***	**16,803**	***100.0***

#prostin = prostaglandin E_2 vaginal gel
*ARM = Artificial Rupture of Membranes

Notes on Indication for Induction:

For the first time in 1999, reasons for induction were included on the Perinatal Morbidity Statistics Form. Only one reason is given for each induction.

Listed below are the proportions of clinical indications given according to the reasons listed in the Australian Council for Healthcare Standards (ACHS) "Clinical Indicators – A Users' Manual: Obstetrics and Gynaecology Indicators Version 2"[12] (p.54).

- The single most common indication for induction in both 1999 and 2000 is prolonged pregnancy (>=41 weeks), with almost 24% of all inductions performed for this reason.
- Of the women who were induced, over 40% were induced for "reasons other than defined ACHS clinical indications". The most common indications given amongst this group were: social induction and "prolonged pregnancy"(where the pregnancy is described as prolonged on the Perinatal Form, but the gestation is actually 40 weeks or less).

Table 2.25: Indication for Induction, All Confinements, 1999—2000

Indication	1999	%	2000	%
Reasons other than defined ACHS clinical indications	6,971	*40.6*	6,915	*41.2*
Prolonged pregnancy (>= 41 weeks)	4,055	*23.6*	3,977	*23.7*
Hypertension	2,605	*15.2*	2,494	*14.8*
Prelabour rupture of membranes	1,211	*7.1*	1,168	*7.0*
Diabetes	822	*4.8*	818	*4.9*
Intrauterine growth retardation	751	*4.4*	726	*4.3*
Fetal distress	502	*2.9*	449	*2.7*
Blood group isoimmunization	44	*0.3*	49	*0.3*
Fetal death in utero (FDIU)	189	*1.1*	181	*1.1*
Chorioamnionitis	21	*0.1*	26	*0.2*
Total	**17,171**	***100.0***	**16,803**	***100.0***

- The most common method of augmentation is ARM (48%), followed by oxytocin only (33%) and then a combination of oxytocin and ARM (18%).

Table 2.26: Method of Augmentation after Spontaneous Onset of Labour, 1999—2000

	1999		2000	
Augmentation Agent(s)	**No. Augmented (n=10,629)**	**% of Augmentations *(17.3)***	**No. Augmented (n=11,766)**	**% of Augmentations *19.1***
Oxytocin only	3,605	*33.9*	3,861	*32.8*
ARM only	5,098	*48.0*	5,719	*48.6*
Oxytocin & ARM	1,923	*18.1*	2,177	*18.5*
Other	3	*0*	9	*0.1*
Total	**10,629**	***100.0***	**11,766**	***100.0***

2.11 Type of Birth

Notes on changes to definitions of elective and emergency caesarean:

In 1999, the VPDCU modified the way of recording its data on caesarean birth. Prior to 1999, an elective caesarean was defined as an operation planned and performed before the onset of labour. An emergency caesarean was performed after the onset of labour.

From 1999, a distinction was made between elective and emergency caesareans with and without labour. The following definitions apply (refer PMS Notifiers' Guide[11] p.23):

"Elective caesarean – no labour: one which takes place, as a planned procedure, before the spontaneous onset of labour".

"**Elective caesarean – labour**: one which takes place as a planned procedure, and takes place after the spontaneous onset of labour".

"**Emergency caesarean – no labour**: one which is undertaken for a complication before the onset of labour (e.g. prolapsed cord, distressed infant, severe PE)".

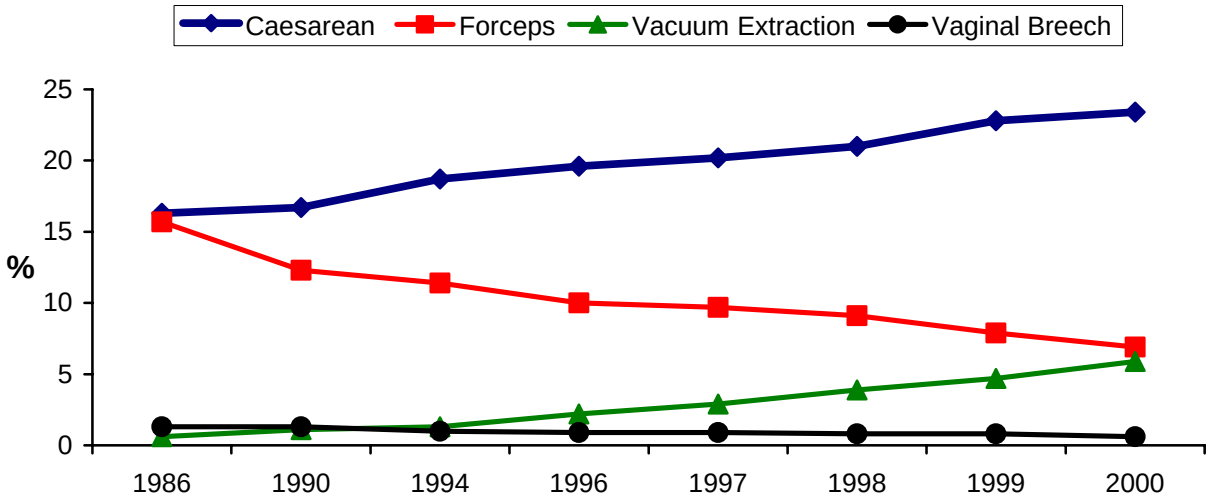
"**Emergency caesarean – labour"**: one which is undertaken for a complication after the onset of labour whether that onset be spontaneous or induced (e.g. prolapsed cord, distressed infant, severe PE".

- The proportion of forceps births continues to decline with a corresponding increase in both elective and emergency caesarean births and vacuum extractions. In 1999, 22.8% of all women gave birth by caesarean section. This figure has risen to 23.4% in 2000.
- The number of vacuum extractions has risen from 4.7% in 1999 to 5.9% in 2000.

Table 2.27: Type of Birth, All Confinements, 1999—2000

Type of Birth	1999	%	2000	%
Spontaneous	39,356	*63.9*	38,888	*63.5*
Caesarean	14,022	*22.8*	14,416	*23.4*
{elective	*7,067*	*11.5*	*7,324*	*11.9}*
{emergency	*6,955*	*11.3*	*7,092*	*11.5}*
Forceps	4,860	*7.9*	4,259	*6.9*
Vacuum	2,875	*4.7*	3,637	*5.9*
Vaginal Breech	474	*0.8*	368	*0.6*
Unknown	0	*0.0*	1	*0.0*
Total	**61,587**	***100.0***	**61,569**	***100.0***

Figure 2.6: Trends in Type of Birth (Other than Spontaneous), All Confinements, 1986—2000



Caesarean	*16.3%*	*16.7%*	*18.7%*	*19.6%*	*20.2%*	*21%*	*22.8%*	*23.4%*
Forceps	*15.7%*	*12.3%*	*11.4%*	*10%*	*9.7%*	*9.1%*	*7.9%*	*6.9%*
Vacuum	*0.6%*	*1.1%*	*1.3%*	*2.2%*	*2.9%*	*3.9%*	*4.7%*	*5.9%*
Vaginal Breech	*1.3%*	*1.3%*	*1.0%*	*0.9%*	*0.9%*	*0.8%*	*0.8%*	*0.6%*

- Almost 68% of women with public accommodation status gave birth spontaneously compared to 53% of women with private accommodation status.
- 20.6% of women with public accommodation status have a caesarean birth compared with 30% of women with private accommodation status. The greatest difference between these two groups is in the proportion having elective caesareans (9.7% versus 16.8% respectively) and forceps deliveries (5.5% versus 10.2% respectively).

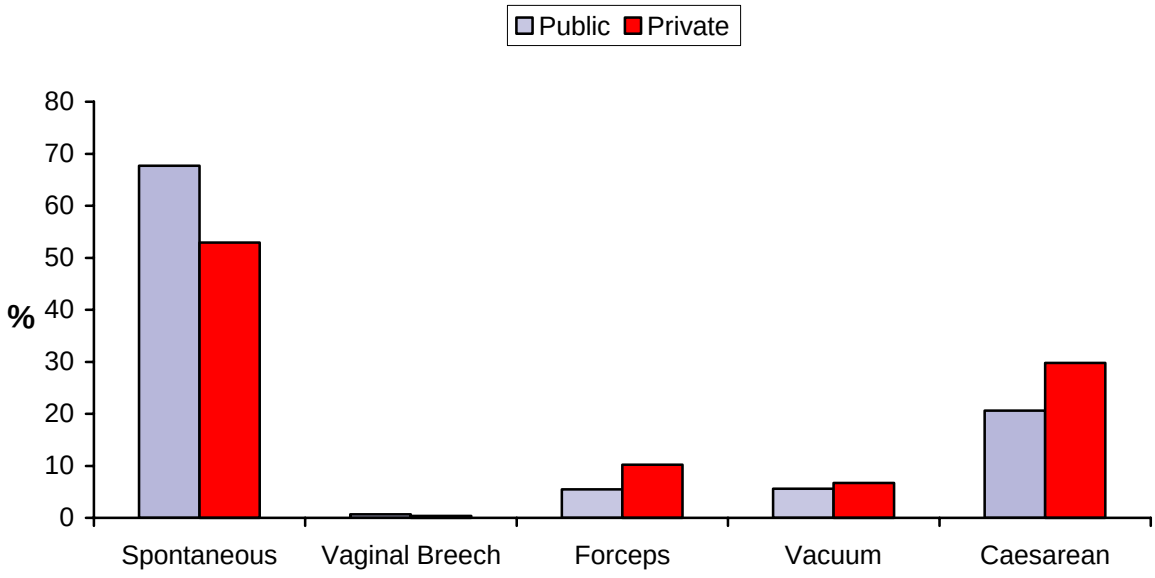
Table 2.28: Type of Birth by Accommodation Status, All Confinements[#], 2000

Type of Birth	Public	%	Private	%
Spontaneous	28,980	*67.7*	9,908	*52.9*
Caesarean	8,824	*20.6*	5,592	*29.8*
{elective	*4,168*	*9.7*	*3,156*	*16.8}*
{emergency	*4,656*	*10.9*	*2,436*	*13.0}*
Forceps	2,353	*5.5*	1,906	*10.2*
Vacuum	2,383	*5.6*	1,254	*6.7*
Vaginal Breech	292	*0.7*	76	*0.4*
Total*	**42,832**	***100.0***	**18,736**	***100.0***

*excludes 1 case with unknown accommodation status
[#]only the first baby in a multiple pregnancy is included

- Overall, 32.4% of women with public accommodation status have an operative delivery compared to 47% of women with private accommodation status.

Figure 2.7: Type of Birth by Accommodation Status, All Confinements, 2000



- One third of nulliparous women 35 years and older have a spontaneous vaginal birth, compared with 73% of nulliparous women less than 20 years of age, and 51% of those aged between 20-34.
- Forceps births are more frequent in nulliparous women of all ages compared with multiparous women (overall 14.4% and 2.4% respectively).

Table 2.29: Type of Birth by Maternal Age Group and Parity, Confinements, Pooled Data, 1999—2000

Type of Birth	<20 years	%	20-34 years	%	35+ years	%	Total	
Nulliparous								
Spontaneous	2,501	*73.0*	21,390	*51.0*	1,781	*31.1*	25,672	*50.3*
Caesarean	446	*13.0*	10,053	*24.0*	2,351	*41.1*	12,850	*25.2*
{elective	*115*	*3.3*	*2,587*	*6.2*	*842*	*14.7}*	*3,544*	*6.9}*
{emergency	*331*	*9.7*	*7,466*	*17.8*	*1,509*	*26.4}*	*9,306*	*18.2}*
Forceps	249	*7.3*	6,156	*14.5*	967	*16.9*	7,372	*14.4*
Vacuum	197	*5.8*	4,054	*9.6*	588	*10.3*	4,839	*9.5*
Vaginal Breech	32	*0.9*	271	*0.6*	33	*0.6*	336	*0.7*
Total	**3,425**	***100.0***	**41,924**	***100.0***	**5,720**	***100.0***	**51,069**	***100.0***
Multiparous								
Spontaneous	517	*84.6*	40,802	*75.3*	11,252	*65.1*	52,571	*72.9*
Caesarean	74	*12.1*	10,604	*19.6*	4,910	*28.4*	15,588	*21.6*
{elective	*36*	*5.9*	*7,356*	*13.6*	*3,455*	*20.0}*	*10,847*	*15.0}*
{emergency	*38*	*6.2*	*3,248*	*6.0*	*1,455*	*8.4}*	*4,741*	*6.6}*
Forceps	6	*1.0*	1,209	*2.2*	527	*3.0*	1,742	*2.4*
Vacuum	6	*1.0*	1,181	*2.2*	486	*2.8*	1,673	*2.3*
Vaginal breech	8	*1.3*	384	*0.7*	113	*0.7*	505	*0.7*
Total*	**611**	***100.0***	**54,180**	***100.0***	**17,288**	***100.0***	**72,079**	***100.0***

*excludes *8 women with unknown maternal age group*

- Approximately 67% of vertex presentations are spontaneously delivered. Almost 84% of breech presentations, and 65% of other presentation types, are delivered by caesarean section.

Table 2.30: Type of Birth by Presentation, All Confinements, Pooled Data, 1999—2000

	Presentation									
Type of Birth	**Vertex**		**Breech**		**Other#**		**Unknown**		**Total**	
	No.	*%*	No.	*%.*	No.	*%*	No.	*%*	No.	*%*
Spon. cephalic	77,887	*66.9*	24	*0.4*	305	*26.6*	28	*15.6*	78,244	*63.5*
Caesarean	23,037	*19.8*	4,510	*83.9*	749	*65.4*	142	*79.4*	28,438	*23.1*
{elective	*11,015*	*9.5*	*3,009*	*56.0*	*284*	*24.8*	*83*	*46.4*	*14,391*	*11.7}*
{emergency	*12,022*	*10.3*	*1,501*	*27.9*	*465*	*40.6*	*59*	*33.0*	*14,047*	*11.4}*
Forceps	9,045	*7.8*	6	*0.1*	62	*5.4*	6	*3.4*	9,119	*7.4*
Vacuum	6,482	*5.6*	5	*0.1*	24	*2.1*	1	*0.6*	6,512	*5.3*
Vaginal Breech	3	*0*	833	*15.5*	5	*0.4*	1	*0.6*	842	*0.7*
Total*	**116,454**	***100.0***	**5,378**	***100.0***	**1,145**	***100.0***	**178**	***100.0***	**123,155**	***100.0***

#Includes predominately face and brow presentations

*Excludes 1 case with unknown presentation and unknown type of birth

Note of Reported Indications for Caesarean:

Up to four indications can be provided for each caesarean so the total number of reported indications exceeds the total number of cases. In the following table, information is provided on indications for caesarean for confinements rather than births, so for multiple pregnancies only the indication(s) for the first baby are used.

- In 1999 and 2000, 22.8% and 23.4% respectively of all mothers underwent a caesarean birth. Approximately half were elective caesareans (with or without labour) and half were emergency caesarean sections (with or without labour). The table below outlines the most common indications reported for these caesareans.

Table 2:31 Indication(s) for Caesarean, 1999—2000

	1999			2000		
Reported Indications	**Total C/S (n=14,022)**	**Elective C/S (n=7,067)**	**Emergency C/S (n=6,955)**	**Total C/S (n=14,416)**	**Elective C/S (n=7,324)**	**Emergency C/S (n=7,092)**
	%#	%#	%#	%#	%#	%#
CPD/FTP*	32.0	16.2	48.1	29.5	13.1	46.4
Previous c/s	29.0	51.1	6.6	30.0	52.0	7.2
Malpresentation	20.6	24.3	16.8	20.3	22.6	18.0
Fetal distress	17.7	1.2	34.4	17.4	0.9	34.4
Hypertension	4.8	3.2	6.3	4.6	5.1	4.1
APH	4.5	3.8	5.2	4.5	4.0	5.0
Multiple pregnancy	2.6	3.2	2.1	2.5	3.1	1.9
IUGR	1.7	2.1	1.4	1.8	2.2	1.5
Other	18.6	16.9	20.4	19.2	21.5	16.7

*CPD= cephalopelvic disproportion, FTP = failure to progress

#Percentages exceed 100% due to more than one indication given for each caesarean section.

- The three main reported indications for **all caesareans** are: CPD / failure to progress (approximately 30%), previous caesarean (approximately 30%) and malpresentation (20%).
- The three main reported indications for **elective caesareans** are: previous caesareans (approximately 52%), malpresentation (approximately 24%) and "Other reported indications".
- The three main reported indications for **emergency caesareans** are: CPD / failure to progress (approximately 47%), fetal distress (34%) and malpresentation (approximately 17%).

2.12 Analgesia for Labour and Anaesthesia for Operative Delivery

Notes on reporting of Analgesia for Labour and Anaesthesia for Operative Delivery:

For the first time in 1999, the Perinatal Morbidity Statistics Form recorded the use of analgesia for labour and anaesthesia for operative delivery. These data items may record up to four analgesic agents and four anaesthetic agents per birth.

"**Analgesia for labour**" are agents administered to the mother usually by injection or inhalation, to relieve pain during labour and birth (p.24)".

"**Anaesthesia for delivery"** is usually administered for, and associated with, the operative birth of the baby (forceps, vacuum or caesarean section) and for an episiotomy (p.24)".

"**An operative delivery/birth"** includes vacuum extraction (ventouse), forceps, caesarean and breech extraction (p.23).

(Refer PMS Notifiers' Guide[11] p.23-24)

- The table below records the reported use of analgesia for all women who went into labour. This constitutes 86% of all women who gave birth and excludes women who underwent a caesarean with no labour.
- Approximately one quarter of all women who experience labour have no analgesia, with equal proportions (approximately 21%) being administered nitrous oxide only or epidural/spinal/caudal analgesics.

Table 2.32: Analgesia for Labour, 1999—2000

Analgesia for Labour	1999	%	2000	%
No analgesia	14,641	*27.3*	13,600	*25.6*
Nitrous oxide only	11,247	*21.0*	11,647	*21.9*
IM narcotics only	7,755	*14.5*	6,544	*12.3*
Nitrous oxide & IM narcotics	8,320	*15.5*	8,519	*16.0*
Epidural/spinal/caudal with or without IM narcotics	11,322	*21.1*	12,658	*23.8*
Other	230	*0.4*	234	*0.4*
Unknown	28	0.1	0	0
Total*	**53,543**	***100.0***	**53,202**	***100.0***

*excludes 248 cases in 1999 and 247 cases in 2000 with failed inductions of labour, where analgesia was reported but women did not go into labour

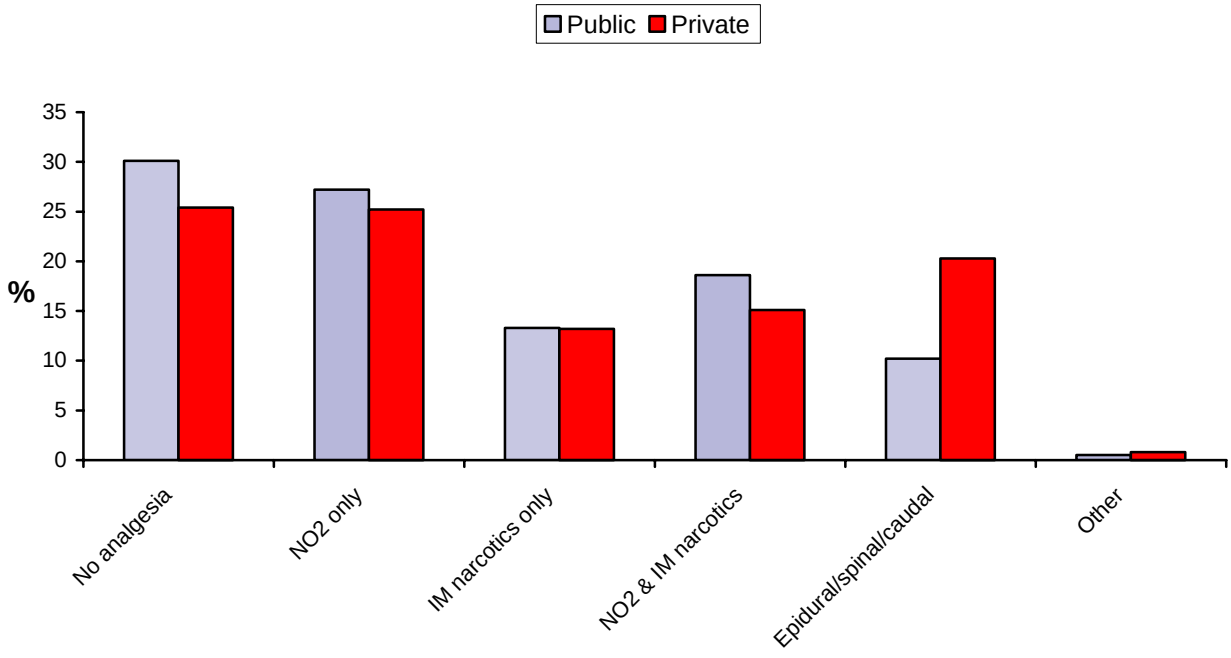
- The table below records the reported use of analgesia for all women who had a spontaneous cephalic birth (approximately 64% of all women giving birth) regardless of the type of onset of labour.
- Approximately 30% of all women who have a spontaneous cephalic birth have no analgesia, whilst 25% have nitrous oxide only, 15% have IM narcotics only and approximately 12% have epidural / spinal / caudal with or without IM narcotics.

Table 2.33: Analgesia for Spontaneous Cephalic Births, 1999—2000

Analgesia for Labour	1999	%	2000	%
No analgesia	12,114	*30.8*	11,255	*28.9*
Nitrous oxide only	9,936	*25.2*	10,390	*26.7*
IM narcotics only	5,991	*15.2*	5,162	*13.3*
Nitrous oxide & IM narcotics	6,550	*16.6*	6,896	*17.7*
Epidural/spinal/caudal with or without IM narcotics	4,542	*11.5*	4,969	*12.8*
Other	199	*0.5*	216	*0.6*
Unknown	24	0.1	0	0
Total	**39,356**	***100.0***	**38,888**	***100.0***

- Almost twice as many women with private accommodation status who had a spontaneous cephalic birth were administered an epidural compared to women with public accommodation status (20.3% versus 10.2% respectively).

Figure 2.8: Analgesia for Spontaneous Cephalic Births by Accommodation Status, 2000



Public	*30.1%*	*27.2%*	*13.3%*	*18.6%*	*10.2%*	*0.5%*
Private	*25.4%*	*25.2%*	*13.2%*	*15.1%*	*20.3%*	*0.8%*

- Approximately 20% of women who had an operative vaginal birth (forceps, vacuum or assisted breech) were reported as having no anaesthesia, whilst approximately 55% had an epidural. Only a very small proportion had a general anaesthetic (less than 0.5%).
- Of the 20% of women who had an operative delivery with no reported anaesthesia, 36% had an epidural/spinal/caudal analgesia, 48.9% had nitrous oxide or intramuscular narcotics or both, and 14.7% were reported as having no analgesia. This means that only 3% of women having operative delivery had no anaesthesia or analgesia.
- Most women (approximately 87%) who have a caesarean section undergo an epidural/spinal/caudal anaesthesia. The remainder have a general anaesthetic.

Table 2:34 Anaesthesia for Operative Delivery, 1999—2000

	1999			2000		
Anaesthesia	**Labour with operative vaginal delivery (n=8,209)**	**Labour with C/S (n=5,976)**	**No labour with C/S (n=8,046)**	**Labour with operative vaginal delivery (n=8,264)**	**Labour with C/S (n=6,049)**	**No labour with C/S (n=8,367)**
	%	%	%	%	%	%
No anaesthesia	20.1	0	0	22.1	0	0
LA only	9.3	0	0	9.6	0	0
Pudendal only	15.5	0	0	13.3	0	0
Epidural/spinal/caudal	54.6	84.5	86.9	54.5	87.4	89.7
GA* only	0.5	13.1	11.0	0.3	11.1	9.3
GA with epidural/spinal/caudal	0	1.4	1.0	0.1	1.4	0.8
Other	0	0.1	0.1	0.3	0	0.1
Unknown	0	0.7	0.9	0	0	0
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

*GA = general anaesthetic

2.13 Perineal Status

Notes on Perineal Status:

For the first time in 1999, the Perinatal Morbidity Statistics Form included a specific item for the recording of perineal status (sutured tear and / or episiotomy). Since the early 1990s midwives were encouraged to record data on perineal status on the Perinatal Form but it was probably under-reported. With the inclusion of this data item on the form in 1999, these data should now be reliably reported.

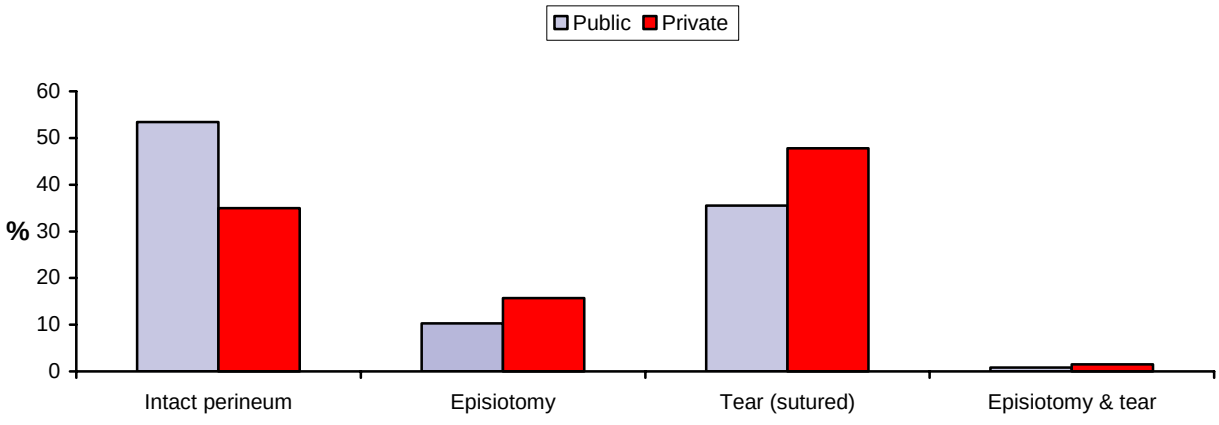
- In 77% of women who give birth vaginally, 40% have an intact perineum, 22% have an episiotomy and 35% have a tear which requires suturing.
- The proportion of tears are as follows: first degree – 45%, second degree – 51%, third degree - 3.4% and fourth degree – 0.2%. There were another 1% of women (n=347) who had a laceration of the vaginal wall without perineal laceration.
- There were an additional 2,485 unsutured tears reported on the Perinatal Form in 1999, and 2,440 in 2000.

Table 2.35: Perineal Status for Vaginal Births, 1999—2000

Perineal Status	1999	%	2000	%
Intact perineum	19,016	*40.0*	18,888	*40.1*
Episiotomy	10,363	*21.8*	10,393	*22.0*
Tear (sutured)	16,987	*35.7*	16,908	*35.9*
Episiotomy and tear	1,199	*2.5*	963	*2.0*
Total	**47,565**	***100.0***	**47,152**	***100.0***

- Women with private accommodation status, having a spontaneous cephalic birth, are more likely to have both an episiotomy (15.7%) or tear (47.8%) than women in public accommodation status (10.3% and 35.5% respectively)

Figure 2.8: Perineal Status for Spontaneous Cephalic Birth by Accommodation Status, 2000



Public	*53.4%*	*10.3%*	*35.5%*	*0.8%*
Private	*35.0%*	*15.7%*	*47.8%*	*1.5%*

2.14 Postnatal Length of Stay

- The proportion of women staying in hospital postnatally 3 days or less continues to increase from 46% in 1999 to 48.4% in 2000.

Table 2.36: Postnatal Length of Stay, All Confinements, 1999—2000

Postnatal Length of Stay	1999	%	2000	%
1 day	5,411	*8.8*	5,609	*9.1*
2 days	9,214	*15.0*	10,542	*17.1*
3 days	13,694	*22.2*	13,638	*22.2*
4 days	12,609	*20.5*	13,291	*21.6*
5 days	10,361	*16.8*	9,631	*15.6*
6 days or more	10,298	*16.7*	8,857	*14.4*
Total*	**61,587**	***100.0***	**61,568**	***100.0***

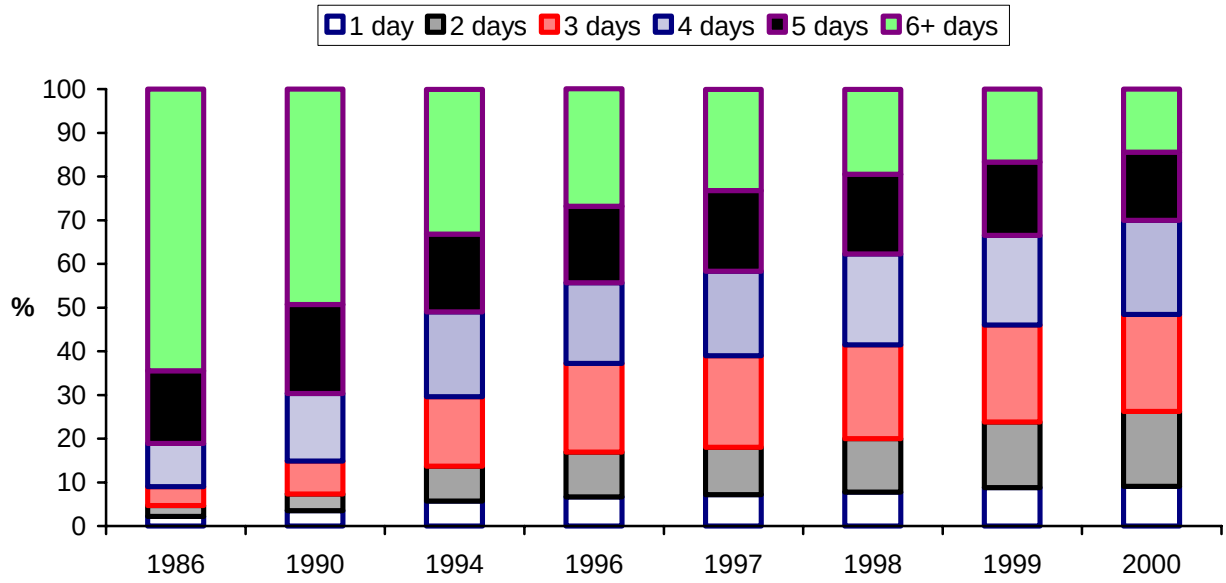
*excludes 1 case with unknown postnatal length of stay

- There have been marked changes in length of stay from 50% staying 6 days or more in 1990 to 14% in 2000.

Table 2.37: Trends in Postnatal Length of Stay, All Confinements, 1986—2000

Postnatal Length of Stay	1986 %	1990 %	1994 %	1996 %	1997 %	1998 %	1999 %	2000 %
1 day	2.2	3.5	5.7	6.7	7.2	7.8	8.8	9.1
2 days	2.5	3.8	8.0	10.2	10.8	12.2	15.0	17.1
3 days	4.3	7.6	15.9	20.3	21.0	21.5	22.2	22.2
4 days	9.9	15.4	19.4	18.5	19.3	20.8	20.5	21.6
5 days	16.6	20.4	17.8	17.5	18.5	18.2	16.8	15.6
6 days or more	64.5	49.3	33.1	26.9	23.1	19.4	16.7	14.4

Figure 2.9: Trends in Postnatal Length of Stay, All Confinements, 1986—2000



- Overall, the postnatal length of stay for all women (whether giving birth spontaneously or by caesarean) continues to decline. In 1996, 56% of women who had a caesarean birth stayed 6 days or more compared with 39% in 2000.

Table 2.37: Postnatal Length of Stay by Type of Birth, Confinements, 1999—2000

Postnatal Length of Stay	1999	%	2000	%
Spontaneous Birth				
1 day	4,773	*12.1*	5,012	*12.9*
2 days	7,988	*20.3*	9,243	*23.8*
3 days	10,790	*27.4*	10,446	*26.9*
4 days	7,728	*19.6*	7,398	*19.0*
5 days	5,229	*13.3*	4,721	*12.1*
6 days or more	2,848	*7.2*	2,068	*5.3*
Total	**39,356**	***100.0***	**38,888**	***100.0***
Caesarean Birth				
1 day	159	*1.1*	145	*1.0*
2 days	411	*2.9*	401	*2.8*
3 days	1,002	*7.1*	1,115	*7.7*
4 days	3,101	*22.1*	3,875	*26.9*
5 days	3,369	*24.0*	3,230	*22.4*
6 days or more	5,980	*42.6*	5,650	*39.2*
Total	**14,022**	***100.0***	**14,416**	***100.0***

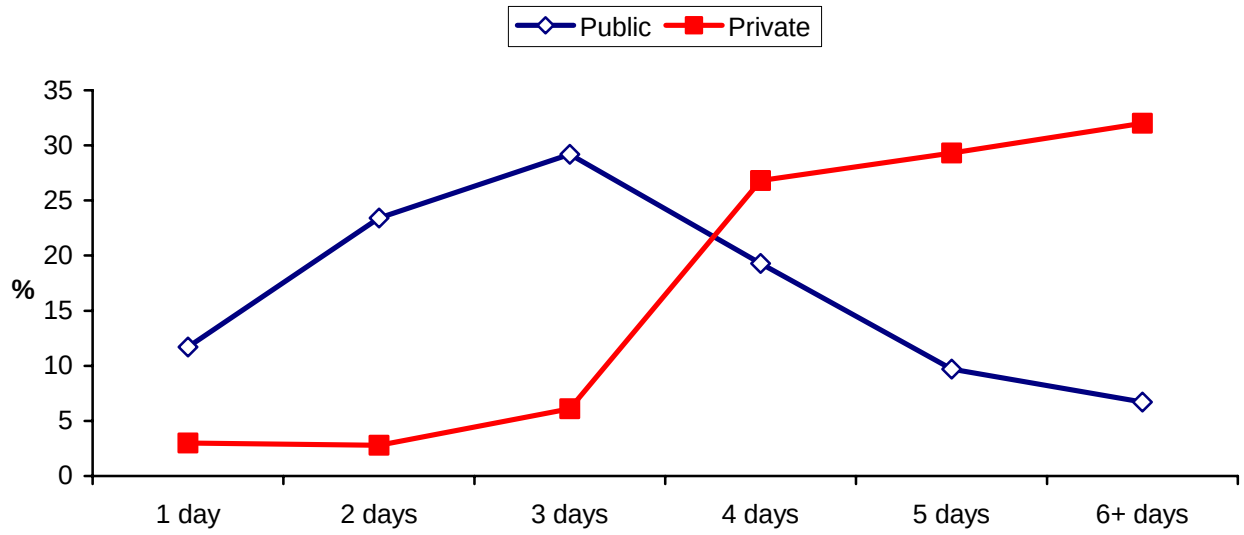
- Over 64% of women with public accommodation status have a postnatal length of stay of three days or less compared to almost 12% of women with private accommodation status.

Table 2.39: Postnatal Length of Stay by Accommodation Status, All Confinements, 2000

Postnatal Length of Stay	Public	%	Private	%
1 day	5,040	*11.7*	569	*3.0*
2 days	10,022	*23.4*	520	*2.8*
3 days	12,498	*29.2*	1,140	*6.1*
4 days	8,278	*19.3*	5,013	*26.8*
5 days	4,134	*9.7*	5,497	*29.3*
6 days or more	2,860	*6.7*	5,997	*32.0*
Total*	**42,832**	***100.0***	**18,736**	***100.0***

*excludes 1 case with unknown accommodation status

Figure 2.10 : Postnatal Length of Stay by Accommodation Status, All Confinements, 2000



3. Infant Factors

3.1 Sex

- There continues to be a higher proportion of male babies born (51%). However the ratio of male to female babies has not changed since 1983.

Table 3.1: Sex of Infants, All Births, 1999—2000

Sex	1999	%	2000	%
Male	32,073	*51.2*	32,070	*51.3*
Female	30,605	*48.8*	30,483	*48.7*
Indeterminate	11	*0.0*	5	*0.0*
Total*	**62,689**	***100.0***	**62,558***	***100.0***

*excludes 4 cases with unknown sex

- Whilst there are slightly more male stillbirths and neonatal deaths than female stillbirths and neonatal deaths, more male babies survive beyond 28 days.

Table 3.2: Sex of Infants by Discharge Status, All Births, Pooled Data, 1999—2000

Sex	Stillbirth	%	Neonatal Death	%	Survived > 28 days	%	Total
Male	462	*51.9*	227	*54.3*	63,454	*51.2*	64,143
Female	412	*46.3*	189	*45.2*	60,487	*48.8*	61,088
Indeterminate	12	*1.3*	2	*0.6*	2	*0.0*	16
Total*	**886***	***100.0***	**418**	***100.0***	**123,943**	***100.0***	**125,247**

*excludes 4 cases with unknown sex

3.2 Resuscitation

Note on Changes to Reporting of Resuscitation:

In 1999, the methods of resuscitation were modified on the Perinatal Form to reflect national reporting requirements. From 1999 onwards one method of resuscitation is retained in the data collection (previously 3 methods could be recorded). Therefore only the most intensive resuscitation method is included for each baby.

- Approximately 57% of all babies born in Victoria do not have any form of resuscitation.

Table 3.3: Method of Resuscitation, All Births, 1999—2000

Method of Resuscitation	1999	%	2000	%
None	35,626	*56.8*	36,071	*57.7*
Suction only	10,278	*16.4*	9,922	*15.9*
O2 therapy	3,625	*5.8*	3,801	*6.1*
Suction & O2	7,523	*12.0*	7,658	*12.2*
IPPR bag & mask	4,520	*7.2*	4,350	*7.0*
Endotracheal intubation & IPPR	494	*0.8*	395	*0.6*
External cardiac massage & ventilation	167	*0.3*	115	*0.2*
Other*	455	*0.7*	250	*0.4*
Total	**62,688#**	***100.0***	**62,562**	***100.0***

*Includes sodium bicarbonate antagonist injection
#One baby had unknown methods of resuscitation

3.3 Apgar Score at 5 Minutes

Table 3.4: Baby's Apgar Score at Five Minutes, Livebirths Only, 1999—2000

Apgar Score at 5 minutes	1999	%	2000	%
<4	205	*0.3*	151	*0.2*
4 to 6	626	*1.0*	625	*1.0*
7	879	*1.4*	871	*1.4*
8	2,869	*4.6*	2,843	*4.6*
9	38,960	*62.6*	38,926	*62.6*
10	18,611	*29.9*	18,659	*30.0*
Unknown	67	*0.1*	69	*0.1*
All Livebirths	**62,217**	***100.0***	**62,144**	***100.0***

3.4 Birthweight

Table 3.5: Birthweight Distribution, All Births, 1999—2000

Birthweight (grams)	1999	%	2000	%
Less than 500	244	*0.4*	207	*0.3*
500-999	322	*0.5*	302	*0.5*
1,000-1,499	400	*0.6*	404	*0.6*
1,500-1,999	801	*1.3*	842	*1.3*
2,000-2,499	2,573	*4.1*	2,417	*3.9*
2,500-2-999	9,936	*15.8*	9,625	*15.4*
3,000-3499	22,231	*35.5*	22,582	*36.1*
3,500-3999	18,899	*30.1*	18,832	*30.1*
4,000-4,499	6,228	*9.9*	6,202	*9.9*
4,500+	1,045	*1.7*	1,135	*1.9*
Unknown	10	*0.0*	14	*0.0*
Total	**62,689**	***100.0***	**62,562**	***100.0***

- The trend observed in previous years has continued so that the percentage of low birthweight babies (<2,500g) has risen from 5.9% in 1986 to 6.9% in 1999, with a slight decrease in 2000 to 6.6%. Otherwise, the birthweight distribution has remained very stable between 1986-2000.

Table 3.6: Trends in Birthweight Distribution, All Births, 1986—2000

Birthweight (grams)	1986 %	1990 %	1994 %	1996 %	1997 %	1998 %	1999 %	2000 %
Less than 500	0	0.1	0.3	0.4	0.3	0.3	0.4	0.3
500-999	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
1,000-1,499	0.6	0.6	0.6	0.6	0.6	0.7	0.6	0.6
1,500-1,999	1.2	1.2	1.2	1.2	1.2	1.3	1.3	1.3
2,000-2,499	3.6	3.6	3.7	3.8	3.8	4.0	4.1	3.9
2,500-2-999	15.0	15.1	15.2	15.1	15.5	15.3	15.8	15.4
3,000-3499	37.3	37.0	36.6	35.8	36.3	35.5	35.5	36.1
3,500-3999	30.6	30.7	30.4	30.9	30.2	30.4	30.1	30.1
4,000-4,499	9.6	9.4	9.7	10.0	9.7	10.1	9.9	9.9
4,500+	1.7	1.7	1.8	1.9	1.8	1.8	1.7	1.7
Unknown	0.1	0.2	0	0	0	0	0	0
< 2,500	5.9	6.0	6.3	6.4	6.5	6.8	6.9	6.6

Table 3.7: Birthweight Distribution by Gestation, All Births, 1999—2000

Birthweight (grams)	20-27 wks	%	28-31 wks	%	32-36 wks	%	37-41 wks	%	>41 wks	%
1999										
Less than 500	232	*44.5*	3	*0.6*	4	*0.1*	5	*0.0*	0	*0.0*
500-999	243	*46.6*	68	*14.2*	10	*0.3*	1	*0.0*	0	*0.0*
1,000-1,499	43	*8.3*	247	*51.7*	101	*2.6*	9	*0.0*	0	*0.0*
1,500-1,999	1	*0.2*	141	*29.5*	579	*15.0*	80	*0.1*	0	*0.0*
2,000-2,499	0	*0.0*	15	*3.1*	1,327	*34.4*	1,227	*2.2*	4	*0.4*
2,500-2-999	0	*0.0*	3	*0.6*	1,289	*33.5*	8,608	*15.1*	36	*3.7*
3,000-3499	0	*0.0*	1	*0.2*	447	*11.6*	21,555	*37.9*	228	*23.4*
3,500-3999	0	*0.0*	0	*0.0*	81	*2.1*	18,397	*32.4*	421	*43.2*
4,000-4,499	0	*0.0*	0	*0.0*	10	*0.1*	5,989	*10.5*	229	*23.5*
4,500+	0	*0.0*	0	*0.0*	2	*0.1*	986	*1.7*	57	*5.8*
Unknown	2	*0.4*	0	*0.0*	3	*0.1*	5	*0.0*	0	*0.0*
Total*	**521**	***100.0***	**478**	***100.0***	**3,853**	***100.0***	**56,862**	***100.0***	**975**	***100.0***
2000										
Less than 500	195	*39.8*	5	*1.0*	3	*0.1*	4	*0.0*	0	*0.0*
500-999	245	*50.0*	50	*10.4*	7	*0.2*	0	*0.0*	0	*0.0*
1,000-1,499	43	*8.8*	266	*55.2*	93	*2.4*	2	*0.0*	0	*0.0*
1,500-1,999	1	*0.2*	144	*29.9*	623	*16.4*	74	*0.1*	0	*0.0*
2,000-2,499	0	*0.0*	12	*2.5*	1,309	*34.4*	1,095	*1.9*	1	*0.1*
2,500-2-999	0	*0.0*	2	*0.4*	1,231	*32.4*	8,360	*14.7*	27	*3.2*
3,000-3499	0	*0.0*	1	*0.0*	444	*11.7*	21,954	*38.5*	180	*21.7*
3,500-3999	1	*0.2*	0	*0.0*	75	*2.0*	18,419	*32.3*	337	*40.6*
4,000-4,499	1	*0.2*	0	*0.0*	12	*0.3*	5,967	*10.5*	222	*26.7*
4,500+	0	*0.0*	0	*0.0*	3	*0.1*	1,069	*1.9*	63	*0.6*
Unknown	4	*0.8*	2	*0.4*	0	*0.0*	6	*0.0*	1	*0.1*
Total*	**490**	***100.0***	**482**	***100.0***	**3,800**	***100.0***	**56,950**	*100.0*	**831**	*100.0*

*excludes 9 cases with unknown gestation

- In both 1999 and 2000, women who have had one or more previous births had a higher proportion of subsequent babies weighing 4000 grams or more than women with no previous births.

Table 3.8: Birthweight Distribution by Mother's Parity, All Births, 1999—2000

	1999			2000		
Birthweight (grams)	**No Previous Births (n=25,876)**	**One or Two Previous Births (n=31,653)**	**Three or More Previous Births (n=5,160)**	**No Previous Births (n=26,125)**	**One or Two Previous Births (n=31,412)**	**Three or More Previous Births (n=5,024)**
	%	**%**	**%**	**%**	**%**	**%**
<1,000	1.2	0.6	1.0	1.0	0.7	0.8
1,000-2,499	7.4	4.8	6.6	7.0	4.8	6.5
2,500-3,999	82.2	81.6	78.2	82.7	81.3	77.4
4,000+	9.2	13.1	14.2	9.3	13.2	15.2
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

- The mean birthweight of all babies in 1999 and 2000 was 3,345 grams and 3,354 grams respectively.
- Male babies are slightly heavier than female babies.

Table 3.9: Birthweight Distribution by Sex, All Births, 1999—2000

	1999				2000			
Birthweight (grams)	**Male**		**Female**		**Male**		**Female**	
	No.	***%***	**No.**	***%***	**No.**	***%***	**No.**	***%***
<1,000	303	*0.9*	258	*0.8*	241	*0.8*	262	*0.9*
1,000-2,499	1,751	*5.5*	2,021	*6.6*	1,728	*5.4*	1,935	*6.3*
2,500-3,999	25,360	*79.1*	25,706	*84.0*	25,383	*79.1*	25,654	*84.2*
4,000+	4,653	*14.5*	2,620	*8.6*	4,713	*14.7*	2,624	*8.6*
Total*	**32,067**	***100.0***	**30,605**	***100.0***	**32,065**	***100.0***	**30,475**	***100.0***
Mean Birthweight	3,405		3,284		3,421		3,286	

*excludes 39 cases with unknown birthweight and/or unknown sex.

- The proportion of caesarean births in the two lowest birthweight categories (<1,500 grams and 1,500-2,499 grams) is over 40%.

Table 3.10: Birthweight Distribution by Type of Birth, All Births, 1999—2000*

Weight Group	1999	%	2000	%
< 1,500 grams				
Spontaneous	337	*34.9*	339	*37.1*
Caesarean	410	*42.4*	398	*43.6*
{elective	*73*	*7.6*	*69*	*7.6}*
{emergency	*337*	*34.9*	*329*	*36.0}*
Forceps	32	*3.3*	25	*2.7*
Vacuum	5	*0.5*	5	*0.5*
Vaginal Breech	182	*18.8*	146	*16.0*
Total	**966**	***100.0***	**913**	***100.0***
1,500-2,499 grams				
Spontaneous	1,554	*46.1*	1,505	*46.2*
Caesarean	1,387	*41.1*	1,346	*41.3*
{elective	*499*	*14.8*	*462*	*14.2}*
{emergency	*888*	*26.3*	*884*	*27.2}*
Forceps	227	*6.7*	181	*5.6*
Vacuum	80	*2.4*	106	*3.3*
Vaginal Breech	126	*3.7*	121	*3.7*
Total	**3,374**	***100.0***	**3,259**	***100.0***
2,500-4,499 grams				
Spontaneous	37,031	*64.6*	36,538	*63.8*
Caesarean	12,552	*21.9*	12,913	*22.6*
{elective	*6,725*	*11.7*	*6,973*	*12.2}*
{emergency	*5,827*	*10.2*	*5,940*	*10.4}*
Forceps	4,582	*8.0*	4,034	*7.0*
Vacuum	2,762	*4.8*	3,501	*6.1*
Vaginal Breech	367	*0.6*	254	*0.4*
Total	**57,294**	***100.0***	**57,240**	***100.0***
4,500+ grams				
Spontaneous	596	*57.0*	657	*57.9*
Caesarean	294	*28.1*	343	*30.2*
{elective	*95*	*9.1*	*122*	*10.7}*
{emergency	*199*	*19.0*	*221*	*19.5}*
Forceps	101	*9.7*	77	*6.8*
Vacuum	54	*5.2*	58	*5.1*
Vaginal Breech	0	*0.0*	0	*0.0*
Total*	**1,045**	***100.0***	**1,135**	***100.0***

*24 cases with unknown birthweight, 1 case with unknown birth type

3.5 Discharge Status

Table 3.11: Discharge Status, All Births, 1999—2000

Discharge Status	1999	%	2000	%
Stillbirth	472	*0.8*	417	*0.7*
Neonatal Death	237	*0.4*	180	*0.3*
Surviving > 28 days	61,980	*98.9*	61,965	*99.0*
Total	**62,689**	***100.0***	**62,562**	***100.0***

- There have been annual fluctuations in the number of perinatal deaths in the reporting period. For example, there were 698 perinatal deaths in 1994 and 619 in 1998. These fluctuations are also seen in 1999 and 2000 with 709 and 597 perinatal deaths respectively.

Table 3.12: Trends in Discharge Status, All Births, 1986—2000*

Discharge Status	1986	1990	1994	1996	1997	1998	1999	2000
	%	%	%	%	%	%	%	%
Stillbirth	0.7	0.8	0.7	0.7	0.7	0.7	0.8	0.7
Neonatal Death	0.5	0.4	0.3	0.3	0.3	0.3	0.4	0.3
Surviving > 28 days	98.9	98.8	98.9	98.9	99.0	99.0	98.9	99.0

*For more information on perinatal mortality rates, refer to the Consultative Council Annual Reports[4]

3.6 Neonatal Survivors

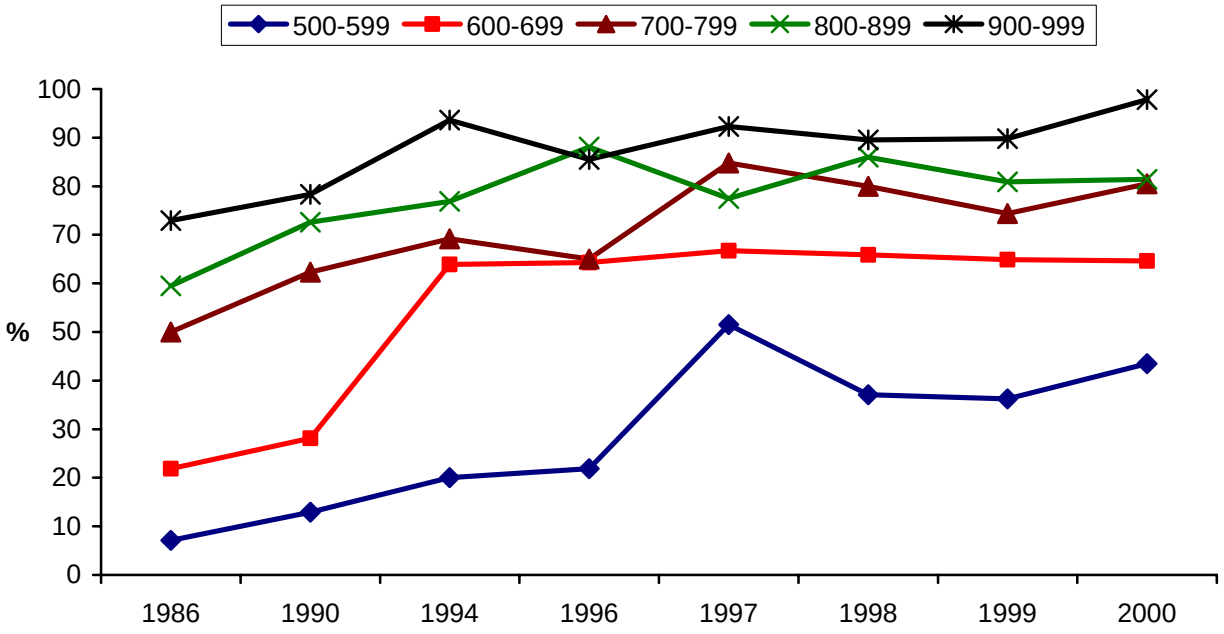
- The proportion of stillbirths in the 500-999gm weight group has fluctuated around 25% to 26% since 1997; and the proportion of stillbirths in the 1,000-1,499 gm weight group has fluctuated around 8% to 10% since 1996.

Table 3.13: Survival of Infants Under 1500 grams, 1999—2000

Weight	1999	2000
500-999 gm		
Total births	**322**	**302**
Stillborn	84	78
% Stillborn	*26.1*	*25.8*
Liveborn	238	224
% of liveborn that survive >=28 days	*68.9*	*73.2*
1,000-1,499 gm		
Total births	**400**	**404**
Stillborn	36	41
% Stillborn	*9.0*	*10.1*
Liveborn	364	363
% of liveborn that survive >=28 days	*95.3*	*97.2*

- When the extremely low birth weight category (<1,000gm) is shown in 100gm categories, it is apparent that there has been an increase in the survival of babies in all birthweight groups since 1986.

Figure 3.1: Trends in Percent Survival of Extremely Low-Birthweight Liveborn Infants, 1986—2000 (Weight in 100g Categories as a Percentage of Survivors Over Livebirths)



500-599	*7.1%*	*12.9%*	*20.0%*	*21.9%*	*51.5%*	*37.1%*	*36.2%*	*43.5%*
600-699	*21.9%*	*28.1%*	*63.9%*	*64.3%*	*66.7%*	*65.9%*	*64.9%*	*64.6%*
700-799	*50.0%*	*62.3%*	*69.2%*	*65.0%*	*84.8%*	*80.0%*	*74.4%*	*80.5%*
800-899	*59.5%*	*72.6%*	*76.9%*	*88.1%*	*77.5%*	*86.0%*	*80.9%*	*81.4%*
900-999	*72.9%*	*78.3%*	*93.6%*	*85.5%*	*92.3%*	*89.5%*	*89.8%*	*97.8%*

4. Multiple Births

4.1 Numbers

Table 4.1: Multiple Births, 1999—2000

Year	Twins*	Sets	*% of all Births*	Triplets*	Sets	*% of all Births*	Quads	Sets	*% of all Births*
1999	2,063[#]	1031	*3.3*	102	34	*0.2*	4	1	*0.0*
2000	1,901[#]	951	*3.0*	63	21	*0.1*	0	0	*0.0*
Total	**3,964**			**165**			**4**		

*Figures relate to total number of multiple births

[#]First twin born 1999, second twin born 2000

- There has been a gradual increase in the proportion of twins since 1986 when it was 2.4% of all births, with the proportion fluctuating around 3% in the last 4 years.
- The number of triplets peaked in 1998, with 37 sets, and has dropped to 34 sets in 1999 and 21 sets in 2000.

Table 4.2: Trends in Multiple Births, 1986—2000

Year	Twins*	Sets	*% of all Births*	Triplets*	Sets	*% of all Births*	Quads *	Sets	*% of all Births*
1986	1,494	747	*2.4*	36	12	*0.1*	4	1	*0.0*
1990	1,649	824.5[@]	*2.5*	69	23	*0.1*	4	1	*0.0*
1994	1,830	915	*2.8*	42	14	*0.1*	8	2	*0.0*
1996	1,762	881	*2.8*	63	21	*0.1*	0	0	*0.0*
1997	1,894	947	*3.0*	60	20	*0.1*	12	3	*0.0*
1998	1,892	946	*3.0*	111	37	*0.2*	0	0	*0.0*
1999	2,063[#]	1031	*3.3*	102	34	*0.2*	4	1	*0.0*
2000	1,901[#]	951	*3.0*	63	21	*0.1*	0	0	*0.0*

*Figures relate to total number of multiples

[#]First twin born 1999, second twin born 2000
[@]First twin born 1990, second twin born 1991

4.2 Perinatal Mortality – Pooled Data

- There is increasing mortality with increasing plurality.

Table 4.3: Perinatal Mortality >=400 grams, Pooled Data, 1999—2000

	Number	per 1,000
Singletons	1,114/121,118	9.2
Twins	170/3,964	42.9
* 1st	75/1,982	37.8
* 2nd	95/1,982	47.9
Triplets	24/165	145.5
* 1st	8/55	145.5
* 2nd	7/55	127.3
* 3rd	9/55	163.6
Quads	0	0

- The pooled data above on twin perinatal mortality rate (PMR), 42.9 / 1,000, includes deaths of 69 twins between 400 and 500 grams. This definition is different from that used by the Consultative Council which reports on deaths >= 500 grams.
- The PMR for twins >=500 grams has decreased from 53.5 / 1,000[1] births in 1986 to 24.1 / 1,000 in 2000.

Table 4.4: Birthweight-Specific Perinatal Mortality, Pooled Data, 1999—2000

Weight (grams)	Singletons	Twins	Triplets	Quadruplets
< 500	991.7	971.8	1,000.0	0
500-999	514.0	376.8	272.7	0
1,000-1,499	196.5	60.5	0	0
1,500-1,999	60.7	10.2	20.3	0
2,000-2,499	21.8	11.8	105.3	0
2,500-2,999	5.5	8.9	0	0
3,000-4,499	1.8	3.4	0	0
4,500+	4.1	0	0	0
Unknown	333.3	125.0	0	0

4.3 Gestation at Birth

- 6.2% of singleton confinements are pre-term compared with 52.2% of twins. Almost all triplets (98.1%) were pre-term and all quads were born before 32 weeks.

Table 4.5: Gestational Age by Plurality*, Pooled Data 1999—2000

Maturity (wks)	Singletons	%	Twins	%	Triplets	%	Quads	%
20-27	800	*0.7*	175	*4.4*	36	*21.8*	0	*0.0*
28-31	684	*0.6*	236	*6.0*	36	*21.8*	4	*100.0*
32-36	5,907	*4.9*	1,656	*41.8*	90	*54.5*	0	*0.0*
37-41	111,912	*92.4*	1,897	*47.9*	3	*1.8*	0	*0.0*
>= 41	1,806	*1.5*	0	*0.0*	0	*0.0*	0	*0.0*
Unknown	9	*0.0*	0	*0.0*	0	*0.0*	0	*0.0*
Total	**121,118**	***100.0***	**3,964**	***100.0***	**165**	***100.0***	**4**	***100.0***

*These figures refer to births rather than confinements.

4.4 Type of Birth

- The rank of the twin influences the type of birth. The first twin presents more often in a vertex position enabling a spontaneous cephalic vaginal birth (28.6%) whilst the second twin more often presents as a breech, making a vaginal breech birth necessary (17.5%).

Table 4.6: Type of Birth for Multiple Births by Rank, Pooled Data, 1999—2000

Type of Birth	Twin 1 %	Twin 2 %	Triplet 1 %	Triplet 2 %	Triplet 3 %
Spontaneous Cephalic	28.6	16.3	5.5	3.6	3.6
Elective Caesarean	29.8	29.7	38.2	38.2	38.2
Emergency Caesarean	24.7	26.3	49.1	50.9	50.9
Vacuum	4.4	3.0	0	0	0
Forceps	10.9	7.2	1.8	0	0
Vaginal Breech	1.7	17.5	5.5	7.3	7.3

- A much higher proportion of infants from multiple births are born by caesarean section than singletons.

Table 4.7: Type of Birth, Singleton Versus Twin Births, Pooled Data, 1999—2000

Type of Birth	Singleton %	Twin %
Spontaneous	64.1	22.4
Elective Caesarean	11.4	29.7
Emergency Caesarean	11.2	25.5
Forceps	7.3	9.1
Vaginal Breech	0.7	9.6
Vacuum	5.3	3.7

4.5 Maternal Age

- There are more twin and triplet births to women 30 - 39 years.

Table 4.8: Maternal Age and Multiple Births*, Pooled Data, 1999—2000

Maternal Age (years)	Singletons	%	Twins	%	Triplets	%	Quads	%
12-14	22	*0.0*	0	*0.0*	0	*0.0*	0	*0.0*
15-19	3,985	*3.3*	58	*1.5*	0	*0.0*	0	*0.0*
20-24	15,453	*12.8*	348	*8.8*	15	*9.1*	0	*0.0*
25-29	37,773	*31.2*	1,144	*28.9*	39	*23.6*	4	*33.3*
30-34	41,353	*34.1*	1,466	*37.0*	81	*49.1*	0	*0.0*
35-39	19,161	*15.8*	826	*20.8*	27	*16.4*	0	*0.0*
40-44	3,248	*2.7*	112	*2.8*	3	*1.8*	0	*0.0*
45+	115	*0.1*	10	*0.3*	0	*0.0*	0	*0.0*
Total[#]	**121,110**	***100.0***	**3,964**	***100.0***	**165**	***100.0***	**4**	***100.0***

*These figures refer to births rather than confinements.
[#]8 women had unknown maternal age.

5. Aboriginality

5.1 Numbers

Note: The information presented in this section refers to women giving birth who were identified as Indigenous on the Perinatal Morbidity Statistics Form. For information on the incomplete ascertainment of Indigenous births refer to Koori Health Counts, Number 1, 2000[13].

- The proportion of Indigenous confinements and births, as reported on the Perinatal Morbidity Statistics Form, has remained fairly stable (between 0.6% to 0.7%) since 1990.

Table 5.1: Trends in Births and Confinements to Indigenous Women, 1986—2000

Number	1986	1990	1994	1996	1997	1998	1999	2000
	%	%	%	%	%	%	%	%
Births	289	436	433	452	385	453	**452**	**377**
Percent	*0.5*	*0.6*	*0.7*	*0.7*	*0.7*	*0.7*	***0.7***	***0.6***
Confinements	287	429	428	448	379	445	**445**	**373**
Percent	*0.5*	*0.6*	*0.7*	*0.7*	*0.6*	*0.7*	***0.7***	***0.6***

5.2 Maternal Age

- There is a significantly increased likelihood that an Indigenous woman giving birth will be a teenager compared with a non-Indigenous woman. She is also less likely to be over 35 years of age. (χ^2 test for heterogeneity = 520.34, df =2, $p < 0.0001$.)

Table 5.2: Maternal Age Differences Between Indigenous and Non-Indigenous Mothers - Pooled Data, 1999—2000

Maternal Age Group (years)	Indigenous	Non-Indigenous
	%	%
< 20	17.0	3.2
20-34	74.6	78.1
35+	8.5	18.8

5.3 Type of Birth

Table 5.3: Type of Birth - Indigenous Confinements, 1999—2000

Type of Birth	1999	%	2000	%
Spontaneous	310	*69.7*	260	*69.7*
Caesarean	94	*21.1*	87	*23.3*
{elective	*40*	*9.0*	*42*	*11.2}*
{emergency	*54*	*12.1*	*45*	*12.1}*
Forceps	19	*4.3*	12	*3.2*
Vacuum	15	*3.4*	13	*3.5*
Vaginal Breech	7	*1.6*	1	*0.3*
Total	**445**	***100.0***	**373**	***100.0***

- Overall, the rate of spontaneous birth is significantly higher for Indigenous women compared with non-Indigenous women. The proportion of emergency and elective caesarean births in Indigenous women is not significantly different from those of non-Indigenous women. Indigenous women are less likely to have a forceps birth than non-Indigenous women. (χ^2 test for heterogeneity = 21.18, df =3, $p < 0.0001$.)

Table 5.4: Type of Birth - Differences Between Indigenous and Non-Indigenous Mothers, Pooled Data, 1999—2000

Type of Birth	Indigenous	Non-Indigenous
	%	%
Spontaneous	69.7	63.5
Elective Caesarean	10.0	11.7
Emergency Caesarean	12.1	11.4
Forceps	3.8	7.4

5.4 Birthweight

- Babies born to Indigenous women have a significantly higher chance of having a birthweight of less than 2,500 grams . (χ^2 test for heterogeneity = 96.47, df =3, $p < 0.0001$)

Table 5.5: Birthweight of Indigenous and Non-Indigenous Infants, Pooled Data, 1999—2000

Birthweight (grams)	Indigenous	Non-Indigenous
	%	%
< 1,500	3.0	1.5
1,500-2,499	12.2	5.3
2,500-4,499	84.0	91.5
4,500+	0.8	1.7

5.5 Mortality

- For 1999-2000 the overall perinatal mortality rate is significantly higher for Indigenous babies compared with non-Indigenous babies (Relative Risk = 2.21 (1.41,3.46) p<0.001).

Table 5.6: Mortality Rates for Babies Born to Indigenous and Non-Indigenous Mothers - Pooled Data, 1999—2000

Category	Indigenous / 1,000	Non-Indigenous / 1,000
Stillbirths	12.1	7.1
Neonatal death	10.8	3.3
Perinatal death	22.9	10.4

- Due to small numbers we have combined data from 1996-2000 to obtain a more stable perinatal mortality rate (PMR). The overall PMR for this period is still significantly higher for Indigenous babies compared with non-Indigenous babies (Relative Risk = 1.56 (1.2,2.03) p<0.001)

Table 5.7: Mortality Rates for Babies Born to Indigenous and Non-Indigenous Mothers, Pooled Data, 1996—2000

Category	Indigenous / 1,000	Non-Indigenous / 1,000
Stillbirths	10.1	7.1
Neonatal Deaths	6.7	3.6
Perinatal Deaths	16.8	10.7

6. Comparison of Selected Factors by Hospital Category

6.1 Hospital Category

- Between 1999 and 2000, there is a small increase in the number of women giving birth in Private hospitals and a decline in Other Country hospitals.
- **These figures are used as the basis for the calculation of percentages in Tables 6.3 and 6.4.**

Table 6.1: Total Confinements by Hospital Category, 1999—2000*

Hospital Category	1999	%	2000	%
Level 3 (Tertiary)	12,986	*21.1*	13,035	*21.2*
Metro Public	17,347	*28.2*	17,241	*28.0*
Private#	15,397	*25.0*	15,986	*26.0*
Country Base	7,643	*12.4*	7,454	*12.1*
Other Country	8,082	*13.1*	7,740	*12.6*
Total	**61,455**	***100.0***	**61,456**	***100.0***

*Does not include planned homebirths

#Includes hospitals in both metropolitan and country areas with private patients only. This category does not include private patients having babies in the other hospital categories.

- Since 1986 there has been a decline in the number of women giving birth at Level 3 hospitals and Other Country hospitals, and a corresponding increase at Metro Public and Private hospitals.

Table 6.2: Trends in Confinements By Hospital Category, 1986—2000

Hospital Category	1986 %	1990 %	1994 %	1996 %	1997 %	1998 %	1999 %	2000 %
Level 3 (Tertiary)	24.8	25.2	23.7	23.5	23.0	21.5	21.1	21.2
Metro Public	26.3	26.5	25.5	26.7	27.3	27.6	28.2	28.0
Private	18.2	20.7	26.2	25.8	25.6	25.4	25.0	26.0
Country Base	11.8	11.9	11.6	11.2	11.6	12.4	12.4	12.1
Other Country	18.7	15.4	12.8	12.6	12.3	13.0	13.1	12.6

6.2 Operative Delivery

- Caesarean births (elective and emergency combined) have risen in all hospital types. The biggest increase is apparent in Private hospitals, where the proportion increased from 22.9% in 1996 to 29.9% in 2000.
- There is a decline in the number of forceps births in all hospital types.

Table 6.3: Caesarean and Forceps Births by Hospital Category, Confinements, 1999—2000

Hospital Category	1999	%*	2000	%*
Forceps				
Level 3 (Tertiary)	1,188	*9.1*	1,042	*8.0*
Metro Public	1,037	*6.0*	786	*4.6*
Private	1,669	*10.8*	1,652	*10.3*
Country Base	611	*8.0*	453	*6.1*
Other Country	355	*4.4*	326	*4.2*
Caesarean				
Level 3 (Tertiary)	3,245	*25.0*	3,202	*24.6*
Metro Public	3,147	*18.1*	3,275	*19.0*
Private	4,535	*29.5*	4,783	*29.9*
Country Base	1,654	*21.6*	1,699	*22.8*
Other Country	1,441	*17.8*	1,457	*18.8*

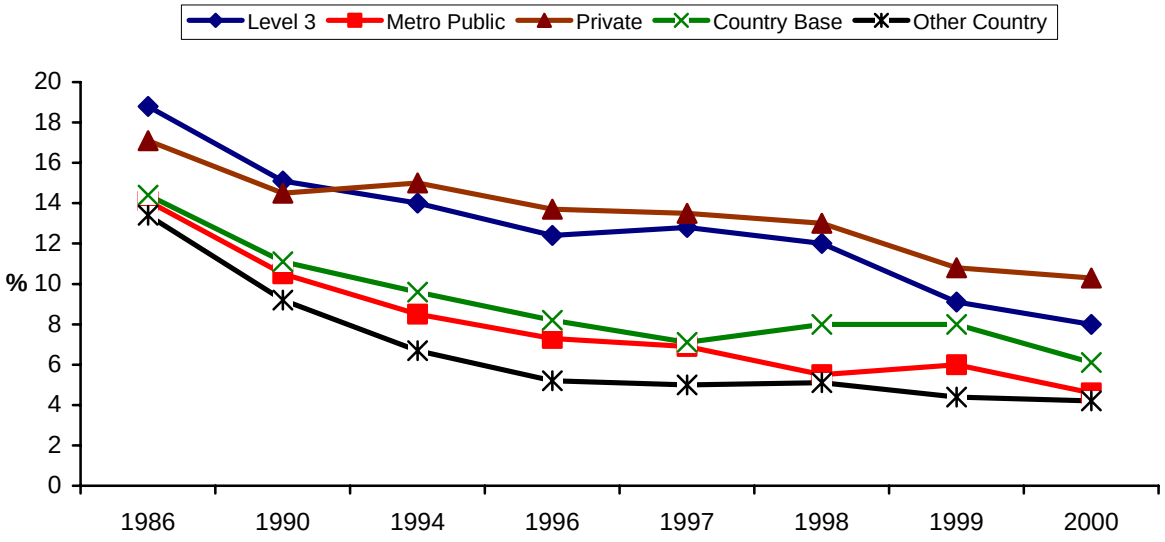
Percentages are calculated using annual births per hospital category (see Table 6.1)

(From Figure 6.1, next page)

- The proportion of forceps births has decreased by approximately 7% to 10% for all hospital categories between 1986-2000.
- The proportion of caesarean births has increased for all hospital categories between 1986-2000. The greatest increase has been in Private hospitals where the caesarean birth rate has risen from 17.4% in 1986 to 29.9% in 2000. The smallest increase has been in Metro Public hospitals where the caesarean birth rate has risen from 16.6% in 1986 to 19% in 2000.

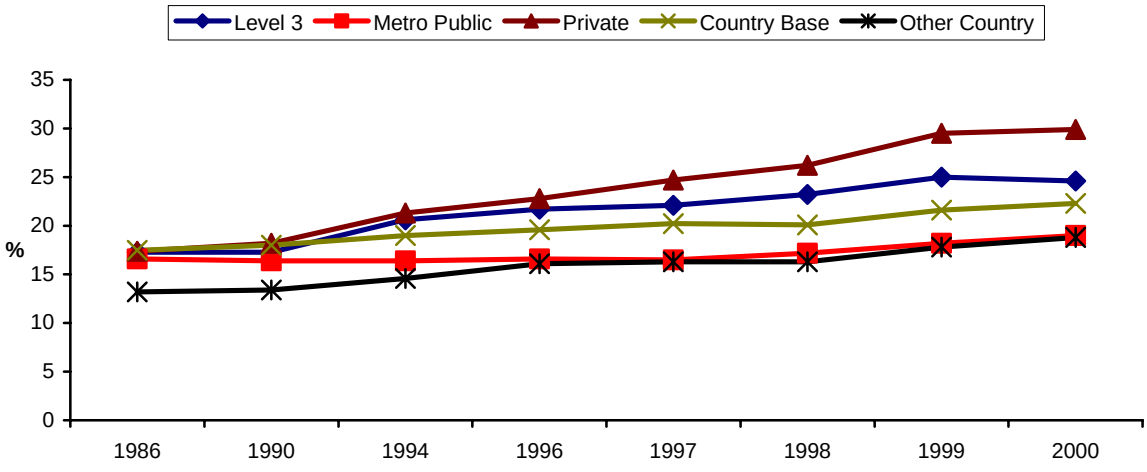
Figure 6.1: Trends in Type of Birth by Hospital Category, 1986—2000

Forceps



Level 3	*18.8%*	*15.1%*	*14.0%*	*12.4%*	*12.8%*	*12.0%*	*9.1%*	*8.0%*
Metro Public	*14.1%*	*10.5%*	*8.5%*	*7.3%*	*6.9%*	*5.5%*	*6.0%*	*4.6%*
Private	*17.1%*	*14.5%*	*15.0%*	*13.7%*	*13.5%*	*13.0%*	*10.8%*	*10.3%*
Country Base	*14.4%*	*11.1%*	*9.6%*	*8.2%*	*7.1%*	*8.0%*	*8.0%*	*6.1%*
Other Country	*13.4%*	*9.2%*	*6.7%*	*5.2%*	*5.0%*	*5.1%*	*4.4%*	*4.2%*

Caesareans



Level 3	*17.3%*	*17.3%*	*20.6%*	*21.7%*	*22.1%*	*23.2%*	*25.0%*	*24.6%*
Metro Public	*16.6%*	*16.4%*	*16.4%*	*16.6%*	*16.5%*	*17.2%*	*18.2%*	*19.0%*
Private	*17.4%*	*18.2%*	*21.3%*	*22.8%*	*24.7%*	*26.2%*	*29.5%*	*29.9%*
Country Base	*17.5%*	*18.0%*	*19.0%*	*19.6%*	*20.2%*	*20.1%*	*21.6%*	*22.3%*
Other Country	*13.2%*	*13.4%*	*14.6%*	*16.1%*	*16.3%*	*16.3%*	*17.8%*	*18.8%*

6.3 Postnatal Length of Stay

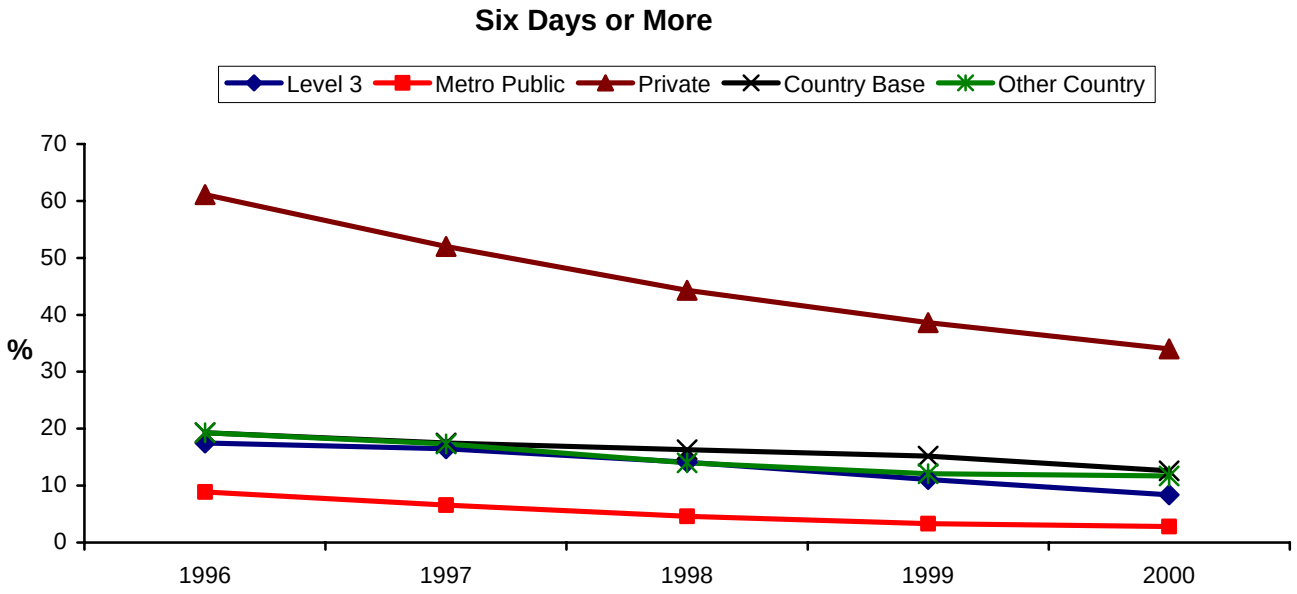
- There has been a decline in the proportion of women staying in all hospital categories six days or more. All hospital categories have increased the proportion of women staying two days or less.

Table 6.4: Postnatal Length of Stay by Hospital Category, All Confinements, 1999—2000

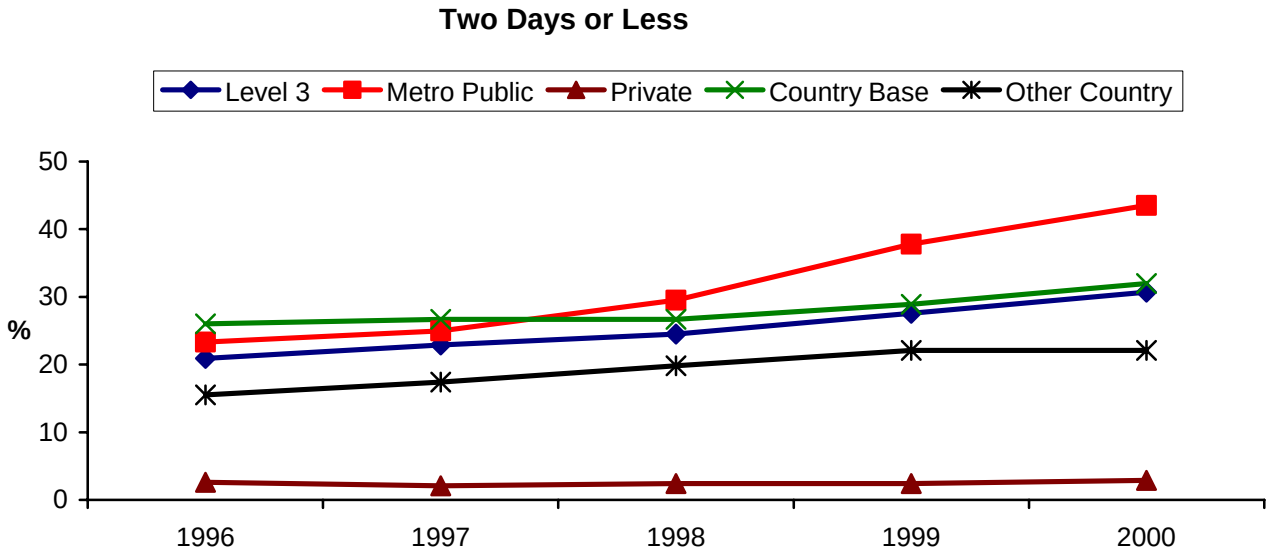
Hospital Category	1999	%*	2000	%*
Six days or more				
Level 3 (Tertiary)	1,450	*11.2*	1,098	*8.4*
Metro Public	578	*3.3*	481	*2.8*
Private	5,943	*38.6*	5,435	*34.0*
Country Base	1,163	*15.2*	938	*12.6*
Other Country	974	*12.1*	905	*11.7*
Two days or less				
Level 3 (Tertiary)	3,581	*27.6*	4,008	*30.7*
Metro Public	6,555	*37.8*	7,503	*43.5*
Private	363	*2.4*	465	*2.9*
Country Base	2,210	*28.9*	2,389	*32.0*
Other Country	1,785	*22.1*	1,674	*21.6*

***Percentages are calculated using annual births per hospital category (see Table 6.1).**

Figure 6.2: Trends in Postnatal Length of Stay by Hospital Category, 1996—2000



Level 3	*17.5%*	*16.5%*	*14.1%*	*11.1%*	*8.4%*
Metro Public	*8.9%*	*6.6%*	*4.6%*	*3.3%*	*2.8%*
Private	*61.1%*	*52.0%*	*44.3%*	*38.6%*	*34.0%*
Country Base	*19.3%*	*17.5%*	*16.3%*	*15.2%*	*12.6%*
Other Country	*19.3%*	*17.3%*	*14.0%*	*12.1%*	*11.7%*



Level 3	*20.9%*	*22.9%*	*24.5%*	*27.6%*	*30.7%*
Metro Public	*23.3%*	*25.0%*	*29.5%*	*37.8%*	*43.5%*
Private	*2.6%*	*2.1%*	*2.4%*	*2.4%*	*2.9%*
Country Base	*26.0%*	*26.7%*	*26.7%*	*28.9%*	*32.0%*
Other Country	*15.5%*	*17.4%*	*19.8%*	*22.1%*	*21.6%*

7. Clinical Indicators (ACHS) for Victoria, 1999—2000

From data collected on the PMS form, clinical indicators as specified by The Australian Council on Healthcare Standards (ACHS)[12] and the Royal Australian & New Zealand College of Obstetricians and Gynaecologists are presented. The table below shows aggregate information for five of the seven clinical indicators for all Victorian hospitals.

Table 7.1: Clinical Indicators (ACHS) for Obstetric Care, Victorian Hospitals, 1999—2000

Indicator Description	1999	2000
	%	%
Indicator 1: Induction of labour for other than defined indications#.		
1.1 Mothers undergoing induction of labour for other than defined indications as a percentage of all mothers undergoing induction of labour for any reason.	40.6	41.2
1.2 Mothers undergoing induction of labour for other than defined indications as a percentage of all mothers giving birth.	11.3	11.2
Indicator 2: The rate of vaginal birth after primary caesarean section.		
2.1 Mothers delivering vaginally at the birth immediately following primary caesarean section as a percentage of all mothers delivering at the birth immediately following primary caesarean section.	22.2	20.4
Indicator 3: Primary caesarean section for failure to progress.	N/A	N/A
Not collected		
Indicator 4: Primary caesarean section for fetal distress.		
4.1 Mothers undergoing primary caesarean section for fetal distress as a percentage of total mothers delivering.	3.7	3.7
4.2 Mothers undergoing primary caesarean section for fetal distress as a percentage of mothers delivering by primary caesarean section.	26.1	25.9
Indicator 5: Incidence of intact lower genital tract in primiparous vaginal births.		
5.1 Primiparous women not requiring surgical repair of the lower genital tract as a percentage of all primiparous women, delivering vaginally.	23.8	23.8
Indicator 6: Apgar score		
6.1 Infants born with an Apgar score of four or less at five minutes post birth as a percentage of all infants born alive @	0.5	0.4
6.2 Infants born with an Apgar score of six or less at ten minutes post birth as a percentage of all infants born alive *	N/A	N/A
*Indicator 7: Term infants admitted to a neonatal intensive care unit for reasons other than congenital abnormality **	N/A	N/A
Term infants admitted to a neonatal intensive care unit for reasons other than congenital abnormality as a percentage of all term infants born.		
Due to incomplete reporting from one large hospital, this figure cannot be calculated.		

#Defined indications include: diabetes, hypertensive disease, fetal distress, chorioamnionitis, blood group isoimmunisation, prelabour rupture of membranes, prolonged pregnancy (41 or more completed weeks), and suspected intrauterine growth retardation.
*@Victorian denominator includes livebirths only.; *Victorian data not collected.*

8. Uses of Perinatal Data

8.1 VPDCU Reports from December 1999 to December 2001

Riley M & Halliday J (1999) *Births in Victoria 1996-1998,* Perinatal Data Collection Unit, Victorian Government Department of Human Services, Melbourne.

Riley M & Halliday J (2000) *Birth Defects in Victoria 1983-1998,* Perinatal Data Collection Unit, Victorian Government Department of Human Services, Melbourne.

Reports are now available on the website: www.dhs.vic.gov.au/phb/topics4.htm#perinatal

8.2 Other Published Reports Using Substantial Amounts of VPDCU Data

*Koori Health Counts: How many Koori babies were born in Victoria in 1999. (*1999) Koori Health Unit, Public Health Division, Victorian Government Department of Human Services, Number 2.

The Consultative Council on Obstetric and Paediatric Mortality and Morbidity. (1999) *Annual Report for the year 1998. Incorporating the 37th Survey of Perinatal Deaths in Victoria.* Melbourne.

National Perinatal Statistics Unit. (2000) *Australia's Mothers and Babies 1998.* Australian Institute of Health and Welfare National Perinatal Statistics Unit. Sydney. Perinatal Statistics Series Number 15: ISSN 1321-8336.

Koori Health Counts: *Counting Koori Births in 1998* (Oct 2000). Perinatal Data Collection Unit and Koori Health Unit, Department of Human Services and Registry of Births Deaths Marriages

The Consultative Council on Obstetric and Paediatric Mortality and Morbidity. (2001) *Annual Report for the year 1999. Incorporating the 38th Survey of Perinatal Deaths in Victoria.* Melbourne.

8.3 Research Projects and Publications from December 1999 to December 2001

This section provides an update of the existing comprehensive research output from the VPDCU. There continues to be very active involvement by PDCU staff in initiating and carrying out research as well as in collaboration with others.

8.3.1 Birthweight

Victorian Infant Collaborative Study

The PDCU has provided data on a number of cohorts of low-birthweight babies who have been followed prospectively with global assessments. Publications continue to be written about the cohorts:

Doyle L, Morley C, Halliday J (2000) *Prediction of survival for preterm births.* Br Med J 320: 647.

Doyle LW, Bowman E, Callanan C, Halliday et al. *Outcome at 5 years of age of children 23-27 weeks' gestation – refining the prognosis.* (Accepted: Pediatrics Feb, 2001)

8.3.2 Antenatal Care and Diagnostic Screening

Amniocentesis and Chorion Villus Sampling

There has been continued monitoring of prenatal diagnosis by the Murdoch Childrens Research Institute (MCRI) in collaboration with Perinatal Data Collection Unit. An annual report is produced which is available from the Public Health and Genetics Unit of the MCRI (Tel: 83416260).

Webley C & Halliday J (Oct 2001) *Annual Report on Prenatal Diagnosis in Victoria 2000*

Halliday J, Warren R, MacDonald G, Rice P, Bell R, Watson L (2001) *Prenatal diagnosis for women 37 years and over: to have or not to have* Prenatal Diagnosis 21: 842-847

Michie S, Weinman J, Miller J, Collins V, Halliday J, Marteau,T. *Predictive genetic testing: high risk expectations in the face of low risk information*. (submitted J Behav Med, 2001)

Liamputtong P, Halliday J, McDonald G, Warren R, Watson L, Bell R. *Why do women decline prenatal screening and diagnosis? Australian women's perspective.* (submitted Women and Health, July 2001)

Article in newsletter (March 2000) *Studying Antenatal Care and Births in Victoria. Health Focus - Current Public Health Issues and Developments for Victoria* (DHS newsletter)

8.3.3 Obstetric Intervention

Vaginal Birth After Caesarean (VBAC)

Stone C., Halliday J., Lumley J., Brennecke S. (2000) *Vaginal birth after caesarean (VBAC): A population study,* Paediatric and Perinatal Epidemiology, 14:340-348

8.3.4 Maternal Morbidity

Gestational Diabetes

McLachlan KA, Stone C, Halliday J, Wein P, Tippett C. *Maternal and infant outcomes in women with diagnosed gestational diabetes in Victoria in 1996* (submitted Oct 2001)

Stone C, Halliday J, Wein P, McLachlan KA, Tippett C. *Incidence and risk factors for gestational diabetes in Victorian women in 1996* (submitted Oct 2001)

8.3.5 Infertility

Twins and IVF

Smithers PR, Halliday J, Hale L, Talbot J, Breheny S, Healy D *Twin pregnancy and birth: Comparison of IVF and non IVF* (submitted Oct 2001)

8.3.6 Birth Defects

Ward B., Lambert S., Halliday J. (March 2001), *Congenital Rubella Syndrome Surveillance -—Can we do better?*, Victorian Infectious Diseases Bulletin

Connelly JF, Coakley JC, Gold H, Francis I, Mathur KS, Rickards AL, Price GJ, Halliday JL, Wolfe R (June 2001) *Newborn screening for congenital hypothyroidism, Victoria, Australia. Paper 1 – the screening programme, demography, baseline demographic data and diagnostic classification,* Pediatric Endocrinology and Metabolism

Neural Tube Defects

Watson M, Watson L, Bell R, Halliday J (2001). *The increasing knowledge of the role of periconceptional folate in Victorian women of child-bearing age: Follow-up of a randomised community intervention trial.* AusNZ J Pub Health , 25:389-395.

Halliday JL., Riley M (September 2000), *Fortification of Foods with Folic Acid,* New England Journal of Medicine, Vol. 343 No. 13:970-971.

Owen TJ., Halliday JL., Stone CA., (January 2000), *Neural tube defects in Victoria, Australia: potential contributing factors and public health implication.* AusNZ J Pub Health, 24 :584-589

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8.3.7 Data Validation and Quality

Ascertainment Issues

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Maternal Morbidity Reporting

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8.4 Individual Data Requests

The PDCU provides unpublished data for a large number of individual requests from those involved in research, student activities, service provision, planning and the maintenance of perinatal health. Between January 1, 2000 to November 2001 there were approximately 154 written and verbal requests for published and unpublished data. Examples of requested data are:

- Numbers of babies with cleft lip / palate over last 10 years for development of project at Royal Children's Hospital.
- Number of non-English-speaking background women by Local Government Area (LGA) for the Maternal and Child Health Funding formula for Victoria, requested by Office of the Family.
- Teenage pregnancy numbers in certain LGAs for Women's Health Resource Service.
- Maternal age, public / private status on women giving birth in LGAs of interest to the Leader newspaper.
- Figures on Down syndrome for the Down Syndrome Association of Victoria publication.

- Data on mothers living in Hume region, but born in Kuwait or Iraq in response to concerns about increased possibility of adverse birth outcomes for the refugees residing in the Goulburn Valley area.
- Data for the Australian Childhood Immunisation Register to compare birth data with that they currently use from the Australian Bureau of Statistics.
- Stillbirth and low birth weight numbers for the National Aboriginal and Torres Islander Health Performance Indicators.
- Births by Statistical Local Area for Dept of Family and Community Services – Children's Services Planning Advisory Committee.
- Number of women from different Non-English speaking backgrounds and Koori mothers for the Maternal and Child Health funding formula.
- Aggregated maternity service performance indicators for Public Hospitals devised by the Productivity Commission (a Commonwealth committee) for a report on Government Services.
- Demographic information requested by a consultant for the Brotherhood of St Laurence on service needs of 0-3 yo children in very disadvantaged families in the Northern Region
- Information by postcode on where women living in Hume give birth for the Department of Rural Health, Melbourne University.
- Aboriginality and maternal age in ten LGAs for DHS Loddon Mallee Region.
- Number of low birth weight babies in Shire of Yarra Ranges as a health indicator for the Shire's development of a Public Health Plan
- Number of drug dependent women giving birth since 1994 for a Chemical Dependency Unit at a tertiary hospital.
- Pre-existing mental illness for a project examining midwives skills and knowledge when assessing mental health of women.
- Information for trends in neonatal activity for the Neonatal Services Advisory Committee of Acute Health Division of DHS - data on births by private / public hospital status and by level of care, as well as admissions to SCN and NICU for comparison with the Victorian Admitted Episode Data

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Appendix A - Perinatal Morbidity Statistics Form A

Appendix B - Definitions

(Where applicable, definitions have been derived from the National Health Data Dictionary Version 6.0)[14].

Aboriginality: an Aboriginal or Torres Strait Islander (TSI) is a person of Aboriginal or TSI descent who identifies as an Aboriginal or TSI and is accepted as such by the community with which he or she is associated (Department of Aboriginal Affairs, Constitutional Section 1981).

Accommodation status tells us the number of people who are being treated as public or private patients.

Anaesthesia for birth is usually administered for, and associated with, the operative birth of the baby (forceps, vacuum or caesarean section) and for an episiotomy.

Analgesia for labour: agents administered to the mother usually by injection or inhalation, to relieve pain during labour and birth.

Apgar score: numerical score to evaluate the baby's condition at 1 minute and 5 minutes after birth based on heart rate, respiration, muscle tone, reflexes and colour.

Augmentation: spontaneous onset of labour complemented with the use of drugs such as oxytocins, prostaglandins or their derivatives, and or artificial rupture of membranes either by hindwater or forewater rupture (ARM). May also refer to labour that is surgically induced then complemented with the use of drugs.

Birth : (For the purposes of this report) is the complete expulsion or extraction from its mother of a baby of at least 20 weeks gestation or, if gestation is unknown, weighing at least 400 g, who is either liveborn or stillborn.

Birthweight: the first weight of the fetus or baby obtained after birth.

Chi-square (χ^2): test for heterogeneity using Epi Info Version 6.1.

Confinement: the number of pregnancies resulting in at least one birth.

(NB: Number of confinements does not equal number of births. One confinement may result in two births (ie twins)).

Country of birth: the country in which the person was born.

Discharge status: status at separation of person from the hospital premises (discharge / transfer / death) and place to which person is released (where applicable).

Elective caesarean – no labour: one which takes place, as a planned procedure, before the spontaneous onset of labour.

Elective caesarean – labour: one which takes place as a planned procedure, and takes place after the spontaneous onset of labour.

Emergency caesarean – no labour: one which is undertaken for a complication before the onset of labour (e.g. prolapsed cord, distressed infant, severe PE).

Emergency caesarean – labour: one which is undertaken for a complication after the onset of labour whether that onset be spontaneous or induced (e.g. prolapsed cord, distressed infant, severe PE.

Extremely low birthweight : weight at birth < 1000 grams.

Gestation: the estimated gestational age of the baby in completed weeks using all available obstetric information (clinical estimation, ultrasound, cycle length etc).

Gravidity: the total number of previous pregnancies, including the current pregnancy, regardless of the outcome (therefore including spontaneous and induced abortions).

Hospital type: hospitals grouped together according to location (metropolitan or rural), accommodation status (private) and / or level of services provided (level three). In this classification "Private" includes those hospitals which accept private patients only.

Indication for induction: the reason given for an induction (medical or surgical or both).

Indication(s) for operative delivery: the reason(s) given for an operative birth.

Induction, medical or surgical: procedure performed for the purpose of stimulating and establishing labour in a woman who has not commenced labour spontaneously.

Livebirth: (For the purposes of this report) is the complete expulsion or extraction from its mother of a baby of at least 20 weeks gestation or, if gestation is unknown, weighing at least 400 g who, after being born, breathes or shows any evidence of life, such as a heartbeat.

Low birthweight: weight at birth <2500 gms.

Multigravida: a woman who has been pregnant for the second or subsequent time .

Multipara: a woman who has delivered more than one livebirth or stillbirth.

Neonatal death: (For the purposes of this report) is a death occurring within 28 days of birth of a liveborn baby whose gestation is at least 20 weeks or, if gestation is unknown, weighing at least 400 grams.

Nullipara: a woman who has not had a prior birth of an infant of 20 weeks gestation or more.

Onset of labour: manner in which labour is initiated.

Operative delivery (birth): includes caesarean - both elective and emergency, forceps, vacuum, and vaginal breech.

Parity: number of previous pregnancies resulting in a livebirth or stillbirth.

Perinatal death: a stillbirth or neonatal death.

Perinatal mortality rate: the number of perinatal deaths (stillbirths plus neonatal deaths) per 1000 births, live and stillbirths.

Perineal status: the state of the perineum following birth.

Plurality: the total number of births resulting from this pregnancy.

Postnatal length of stay: the length of stay of a mother / baby calculated from the date the baby was born until the mother / baby is discharged from the hospital premises.

Presentation: presenting part of the fetus (at lower segment of uterus) at birth.

Primigravida: a woman pregnant for the first time.

Region of residence: the place where the patient lives as defined by Victorian Department of Human services health regions.

Resuscitation: active measures taken immediately after birth to establish independent respiration and heart beat, or to treat depressed respiratory effort and to correct metabolic disturbances.

Stillbirth: is the complete expulsion or extraction from its mother of a baby of at least 20 weeks gestation or, if the gestation is unknown, weighing at least 400 g, who did not, at any time after birth, breathe or show any evidence of life such as a heartbeat.

Very low birth weight: birthweight < 1500 gms.

Appendix C - Department of Human Services - Rural Regions

Appendix C - Department of Human Services - Metropolitan Regions